NATIONAL GEOGRAPHIC

KIDS

BUMPER BOREDOM-BUSTING FUN STUFF!

Australia!

WILDLIFE SPECIAL!

INSIDE AN ANIMAL HOSPITAL

STRIKING SNAPS OF AUS!

ALL ABOUT AUSSIE FROGS!

Charities Registration # CC10300

NFD The National Foundation for the Deaf Inc.

Kiwi kids being denied the right to hear and learn.

Help us to buy 50 pairs of hearing aids with remote microphones.

Before Sophie was diagnosed with Auditory Processing Disorder (APD) we had been noticing small things. Small, but significant. For example, she would become anxious when in a noisy crowd. At birthday parties she would sometime put her hands over her ears and ask to go home early.

It was also difficult to distract her when she watched TV. She would fall asleep in the car on the way home from school. On several occasions she became teary before school as she worried about what was expected of her in class. I also noticed when I visited the school that she played by herself – happily enough – but regardless, on her own. She was also having a lot of trouble with reading and writing and spelling. We thought this was a phase and that maybe we were expecting too much of her. We were so very lucky to have a teacher that picked up her APD.

Once the hearing aids were in place and we had the system working properly, Sophie began immediately to flourish.

We are fundraising to support 50 kids in New Zealand that come from families that cannot afford to buy the hearing equipment they desperately need to lead a happy life and flourish, like Sophie did.

Please donate via

Direct Credit: **ASB 12-3011-0519936-00** Reference: **Apd**

www.givealittle.co.nz (search The National Foundation for the Deaf)

Find out more at **nfd.org.nz/supportourwork** or email **enquiries@nfd.org.nz** or call **0800 867 446, +64 09 307 2922**

Please accept my donation of $50, $25, $20, $10 Other $

☐ I enclose my cheque made payable to The National Foundation for the Deaf Inc.

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Full name

Your postal address

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Signature

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Please post to The National Foundation for the Deaf PO Box 37729, Parnell, Auckland, 1152, New Zealand.

NATIONAL GEOGRAPHIC KiDS

Hey kids!
This issue we're celebrating the wonderful wildlife right here on our doorstep! First stop is the world's busiest emergency wildlife hospital, in Queensland. Head to page 12 to meet some of the patients there. Then gaze in awe at the beauty of our amazing country by checking out some of the sensational snaps from the Australian Geographic Nature Photographer of the Year comp. Bounce across to page 22 for some cool kangaroo facts, then jump over to page 30, as Australia's top frog expert tells us about her favourite amphibians.

There are all the usual facts, puzzles, jokes and crafts, too. So hop in!

The Nat Geo KiDS team

4 COOL POSTERS!

COOL QR CODES!

We've put some **QR codes** in this month's mag. If you point a **smart device** at them you'll be taken to more awesome stuff **online**. Try it here!

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COOL NEWS

Inspiring stories from around the globe...

Record-breaking heatwave

British beaches were packed during the heatwave...

... but UK firefighters had their busiest time since WWII

England isn't normally known for its sunshine, but it was ice lollies all round for NG KiDS' UK team last month, as London sweltered in **40°C** – the **hottest UK temperature ever recorded**.

But while some Brits enjoyed the sunny weather, scientists are worried these **extreme temperatures** could become a **regular feature** of UK summers. Because of **climate change**, drier and hotter weather is becoming the norm across the world – and with it, increased **medical emergencies**, **wildfires** and **transport issues**.

Fortunately, there are **solutions**. Widespread **action** like **planting more trees** in **urban areas**, designing **cooler buildings** and **minimising fossil fuel use** can help tackle the crisis. Let's hope change happens soon!

Aboriginal language inspires AI!

After studying a rare **Aboriginal language** called **Jingulu**, scientists from the **University of New South Wales** realised the unique structure of this **endangered language** could inspire a way for people to **communicate** with new complex forms of **Artificial Intelligence (AI)**.

Spoken by fewer than **20 Jingili people** in the **Northern Territory**'s **Barkly Tablelands**, Jingulu has just three verbs – '**come**', '**go**', and '**do**'. While the **25,000+** verbs of English could be confusing, Jingulu provides a **clear way** to command the 'bots. The idea is that by combining these doing-words with **simple instructions** like 'herd', 'rest' or 'drive', humans (even non-techy ones!), will be able to instruct AI swarms!

A new language inspired by Jingulu could command swarms of drones!

3 FAST FACTS! INDIGENOUS PEOPLES

On **13 September** it'll be **15 years** since the **United Nations** (**UN**) passed the **Declaration on the Rights of Indigenous Peoples**. Let's find out more...

1 Around **5%** of the world's population – more than **370 million** people – are **Indigenous**. They form over **5,000 groups** across **90 countries**, each with a **distinct cultural identity** linked to the lands inhabited by their **ancestors** for **generations**.

2 In **Australia**, **Aboriginal** and **Torres Strait Islander** peoples form the **world's oldest living culture**. Their **rich heritage** and **traditions** have been passed from person to person for **thousands** of years.

3 Britain's colonisation of Australia in **1788** was devastating for Indigenous communities, and throughout the world they have been **evicted** from their lands, **excluded** from decision-making processes and **prevented** from expressing their **culture**. In **2007**, the UN declared that all Indigenous Peoples should be treated **equally** and with **respect**, but there's still work to be done.

Yolngu children celebrate Indigenous Australian art and culture at Garma Festival last month

Fishy fossil find!

One of the best discoveries was the head of this ferocious-looking Jurassic fish called *Pachycormus*!

Hundreds of stunningly **well-preserved sea creature fossils** dating back **183 million years** have been discovered… but not where you might **expect**! **Palaeontologists** dug up the ancient remains beneath a **farmer's field** in **Gloucestershire, UK** – a place that's usually home to **cows**, not **fish**!

These **Early Jurassic-era** animals – including **marine reptiles**, **squid** and **rare insects** – come from a time when this part of the UK was **deep underwater** beneath a **tropical sea**. A team of eight scientists spent four days excavating the site with a digger before splitting **limestone samples** by hand to find fossils. Happily, many of the specimens collected will be donated to a local museum and could go on show to visitors. *Fin*-tastic!

Tiger numbers rise!

Tigers are the world's largest cat species!

Here's some *grrrr*-eat news – wild **tiger** numbers have **increased by 40%**! In 2015 there were just 3,700 wild tigers left, but a recent study counted over **5,500**!

According to the **International Union for the Conservation of Nature** (**IUCN**), who recorded the data, the endangered cats' population is now either **stable** or **increasing**. And while the boost in numbers is mostly due to **improved monitoring**, not a baby boom, it proves that **conservation efforts** *are* working.

In the past seven years, the IUCN has protected almost **54,000km²** of **tiger territory** by restoring habitat, preventing poaching and building fences to reduce conflict with people, so there's **lots of hope** for these fantastic felines!

HERO OF THE MONTH

ALEX KING, COMPOST QUEEN!

Meet green-fingered gardener **Alex King**, founder of the **Elizabeth Street Compost Club** in **Moruya Heads, NSW**!

Alex, 28, already turned her **own** food waste into **nutrient-rich compost**, but in April this year, she decided to get the **neighbours** involved too. She placed a bucket on her front lawn and encouraged people to **drop off food waste** like **peel**, **coffee grounds** and **stale bread**, which she then converted into **eco-friendly plant fertiliser**.

"Finding innovative ways to **reduce**, **reuse** and **recycle waste** is really what gets me up in the morning!" says Alex. "Composting has so many incredible impacts – it **reduces methane** (a harmful greenhouse gas), **regenerates the soil**, **builds healthy** and **resilient food systems**, develops community **goodwill** and helps me stay **physically** and **mentally healthy**."

Amazingly, the club has now composted more than **500kg** of food waste. Go, team!

Why not start your own compost group or get involved with a community garden?

MAKE IT A DATE

Key events for your diary!

SEPT 3

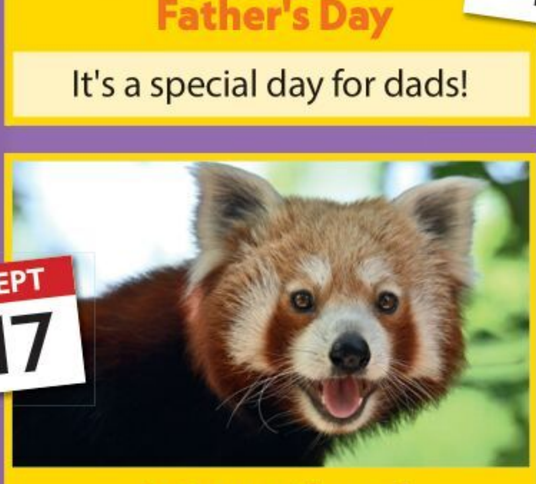
International Vulture Awareness Day

Three cheers for these birds of prey!

SEPT 4

Father's Day

It's a special day for dads!



SEPT 17

International Red Panda Day

It's the cute creatures' special day!

SEPT 22

World Rhino Day

Celebrate these awesome animals!

SEPT 24

World Gorilla Day

Check out gorilla facts at **natgeokids.com/au/gorillas**

Fossil © Dean Lomax; Illustration © Marek Jagucki; All others © Getty Images UK.

WHAT'S UP?

This month's best films, TV shows and books…

Pinocchio's wooden nose grows when he tells fibs!

PINOCCHIO

It's been a whopping **82 years** since ***Pinocchio*** first hit cinemas and the **animated classic** is now getting a **Disney 'live-action'** remake. *Pinocchio* is the tale of a **wooden puppet** built by a sweet old **woodcarver** named **Geppetto** who longs for the wooden toy to become his **real son.** One day, Geppetto's dreams come true – he wishes upon a star and a **blue fairy magically brings Pinocchio to life!** It's not all plain sailing, though, and Pinocchio will have to head off on an **epic adventure** – one that'll test his **loyalty**, **bravery** and **honesty** – if he wants to truly become a *real* boy.

● **Ask your parents to tune into Disney+ from 8 September**

THE LORD OF THE RINGS: THE RINGS OF POWER

Do you love ***The Lord of the Rings* trilogy**? Well, in this new series, head back to the magical lands of **Middle-earth** to find out how the films' **baddie** – the dark lord **Sauron** – first came to power, **thousands of years before** the events of the movies.

Meet colourful characters like **elves**, **dwarves**, people who **live extraordinarily long lives** and little folk called '**harfoots**', as their peaceful lands are rocked by this new **evil** and **his rings of power**. Do they have what it takes to **defeat** him?

This is by far the **most expensive telly show** ever made, but will it live up to the **hype**?

● **Watch it on Amazon Prime from 2 September**

It's Galadriel the elf as you've never seen her before!

SECRET HEADQUARTERS

Imagine how exciting it would be to discover a **secret superhero headquarters!** And what if the **gadget-filled base** was right ***beneath your own home*****?!** Well, that's exactly what happens to **Charlie.** Turns out his dad has been living a **secret double-life**, and all those '**work emergencies**' he's been called away on actually involve **protecting the planet**. Mind = blown!

Now it's up to Charlie and his mates to team up, defend the headquarters and **save the world**. Expect goofy action and tons of cool tech in this breathless movie.

● **Watch on Paramount+ now**

Charlie (second from left) and his friends prepare to save the planet!

THE MOUNTAIN & THE MAIDEN

In this **inspiring documentary**, spend a day in the life of **Aspiya**, a girl from **New Delhi, India**, who's the **main breadwinner** in her family despite being just **ten years old.** Their home – a **one-room-shack** – is right next to **Asia's biggest landfill site.** Each day, Aspiya walks to this massive mound of rubbish to **collect waste** that she sells to companies to **reuse** in their products.

This **eye-opening movie** shows the sad reality of **child labour** and our **wasteful** lifestyles, but young Aspiya remains **happy** and **hopeful** despite her **difficult situation.** Stirring stuff!

● **View it for free on waterbear.com**

Enter ALL comps at **natgeokids.com** by **20 October**

SCAN HERE

KEY Movie Book TV/Streaming Website

THE BARBARIAN & THE TROLL

Evan the troll is desperate for adventure (and to become a **singing star**), so he **burns his bridge** and ventures into the big wide world of **Gothmoria**! Along the way he meets **Brendar** – former warrior princess turned feared **barbarian** – who's on a quest to vanquish an **evil demon**. Evan persuades her to let him join her mission, and this fun TV comedy sees the pair **tackle treacherous terrain** and **bizarre creatures** in a series of **surreal escapades**!

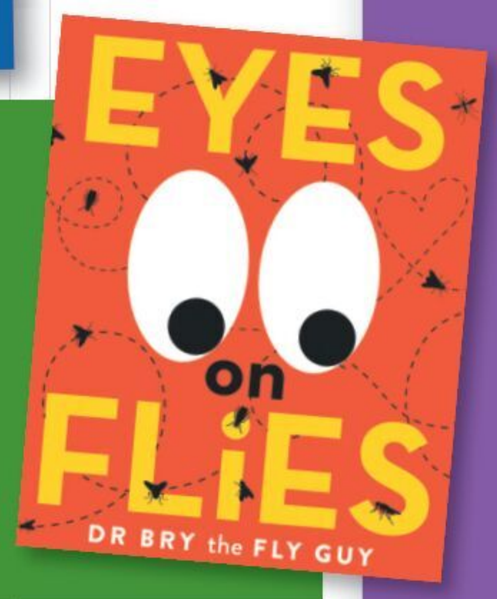
● **On Foxtel On Demand until 3 February 2023 and on SKY New Zealand until 1 November 2022**

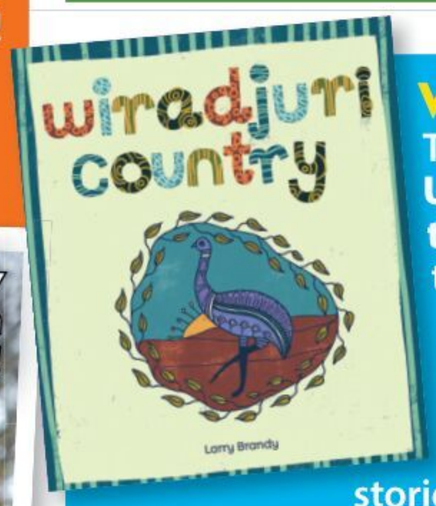
NEW BOOKS!

Eyes on Flies *Dr Bryan Lessard*

Flies are just **yucky bugs** that we'd be better off without, right? Err, WRONG! In this fact-filled book, **Dr Bry the Fly Guy** gives us the lowdown on these surprisingly **incredible insects**.

For example, did you know that flies can **live anywhere** – from freezing cold **Antarctica** to a scorching **hot volcanic bath** – or that there'd be **no chocolate** without them?! Plus, **hairy flies** make the **best pollinators**, and **maggots** (fly larvae) might just be the next **superfood** of the **21st century**. You'll be *buzzing* to read about the **hidden lives** of flies!





Wiradjuri Country *Larry Brandy*

Take a journey across **Wiradjuri Country** with author, **Uncle Larry Brandy**. The **Wiradjuri** are the people of the **three bila** (rivers) and their **nguram-bang** (country) is the **second largest in Australia**.

Packed with amazing images by **Indigenous artists**, this enlightening book will introduce you to Wiradjuri landscapes, the **murri-yang** (sky world) and more. You'll meet native animals, discover great stories and find out everything you need to know about the rich **language**, **culture** and **history** of the Wiradjuri!

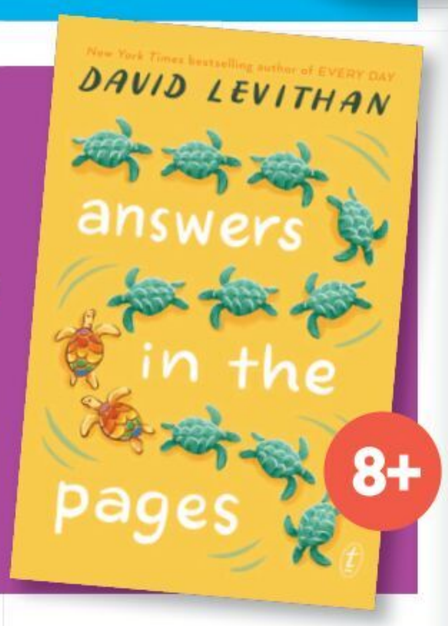
Shortlisted for the **Karajia Award for Children's Literature**!

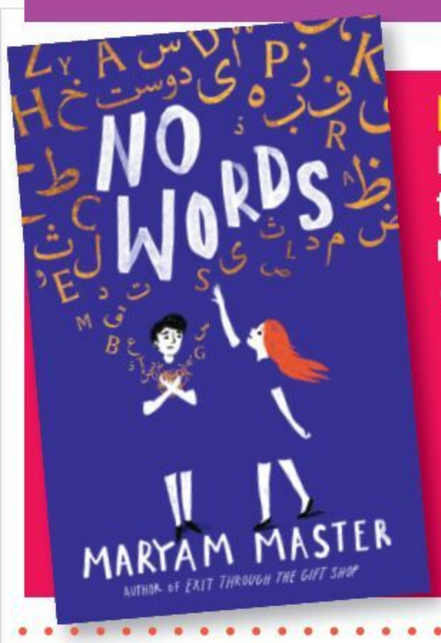
Answers in the Pages *David Levithan*

Donovan can't wait to read ***The Adventurers***, a book his teacher has assigned the **class**. But when his mum reads a copy and concludes the main characters are **gay**, she's not happy – and soon the whole town is freaking out! Donovan can't see what the fuss is about. It's a **good story**!

Meanwhile, **Gideon** has been paired for a project with new student **Roberto**. They immediately **hit it off**, but might their new friendship be **something more**?

This **bold book** is about being **brave in love** and standing up for **what's right**.





No Words *Maryam Master*

It must be really tough being a **refugee** who's forced to start a new life **far from home**. So, when an **Iranian refugee** named **Aria** joins **Hero and Jaz**'s school and gets picked on by **bully Rufus**, they decide to help.

The thing is, they are FAR too chicken to actually do anything heroic, so instead so they **befriend** Aria and try to learn all about him. Like, **why doesn't he speak**? And what are those **dents** on his **middle finger**?

Told with **hope** and **humour**, this powerful book will make you **laugh and cry**!

WIN! **Five** winners will grab **all** of these books! **Scan the QR code** at the top of this page or head to the competitions page at **natgeokids.com** and answer this…

Q What is the capital of Iran?

a) Tehran **b)** Jordan **c)** Newcastle

Enter by **20 October 2022**

AMAZING ANIMALS

Squirrel goes nuts

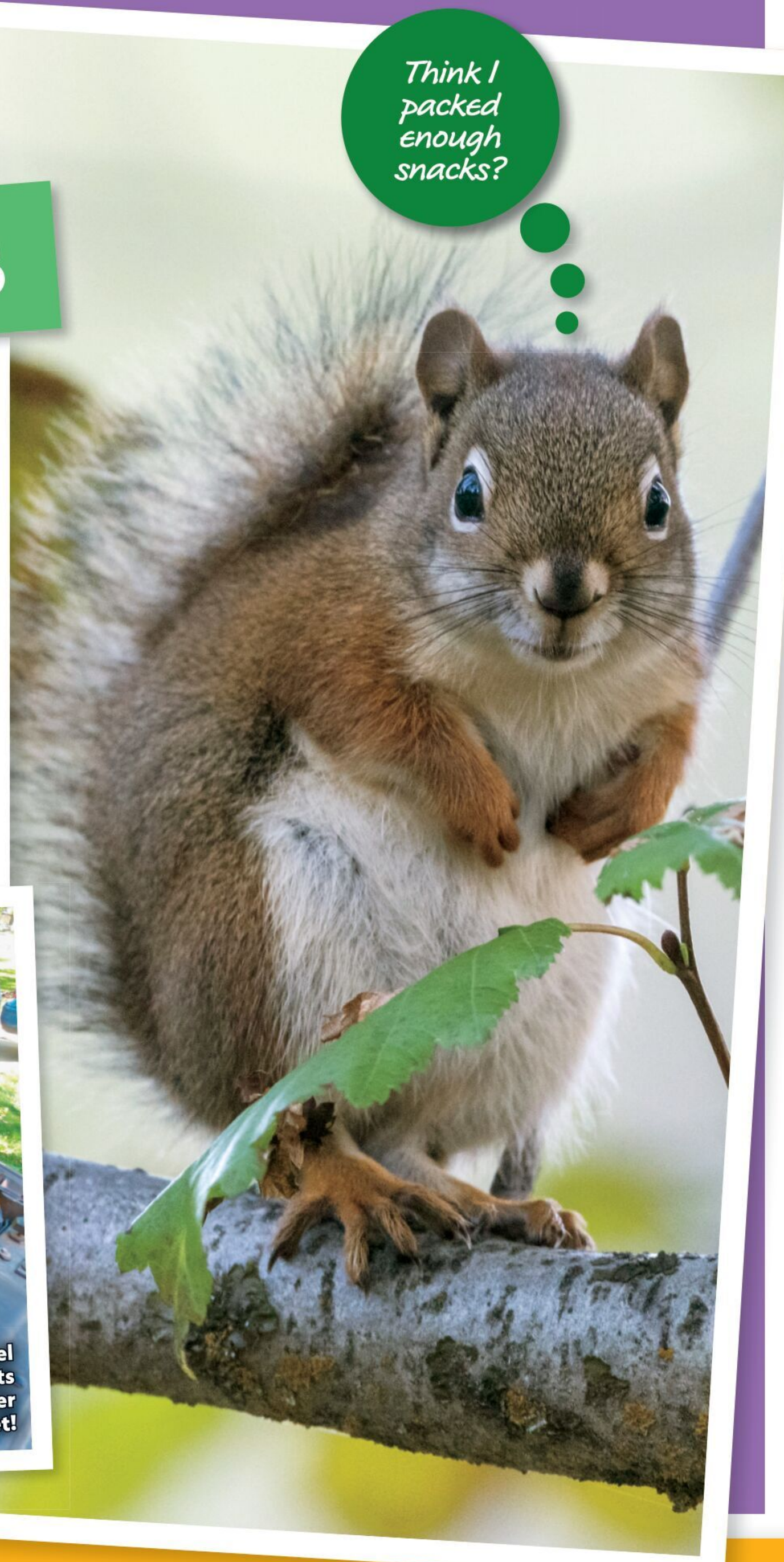
Fargo, North Dakota, USA

This North American **red squirrel** has a surprising spot to stash its walnuts – a **Ute**!

The vehicle's owner, **Bill Fischer**, has tried parking in different spots for **eight years** but always ends up having to pluck the **lime-sized** nuts from his Ute. Last year, after returning from a four-day trip, Bill found a bigger mess than ever before – his vehicle was full of **136kg** of walnuts! They were stuffed around the **engine**, in the **front bumper**, by the wheels and in parts of the **chassis**.

These rodents are **larder hoarders**, which means they keep their treasured treats in **one** or **just a few places** that they **carefully guard**. But why Bill's Ute?

"It appears to be in the **squirrel's territory** and a **good spot to defend** from other squirrels," says wildlife ecologist **John Benson**. "And if this animal has had good luck defending the vehicle, it will probably **defend it for life**." Somebody give this rodent a parking ticket!



The squirrel crammed its walnuts under the Ute's bonnet!

Chicken 'parking warden'

Newstead, New Zealand

Why did the chicken cross the road? Because she '**works**' in the **carpark**!

Decked out in a **yellow hi-vis jacket**, the hen, named **Henry**, patrols the carpark at **Newstead Country Preschool** in **Waikato**. Each morning she greets the arriving students, and her presence reminds motorists to **drive slowly** and carefully, helping the kids stay safe.

The school's principal, **Tracy Trigg**, **rescued** the hen when she appeared at her friend's house, looking thin and lost, and brought the friendly bird to the **farm** attached to the preschool. (Students interact with animals as part of their lessons.) But Henry **didn't want to stay at the school's farm**…

"The carpark was where all the people were, so that's where Henry would turn up in the mornings," Tracy says. "She would rather **hang out with *us*** than the other chickens."

After a few days, Tracey let Henry take on the job permanently. Her payment? **Cuddles** and some **tasty snacks**.

Comeback Critter: Jaguar

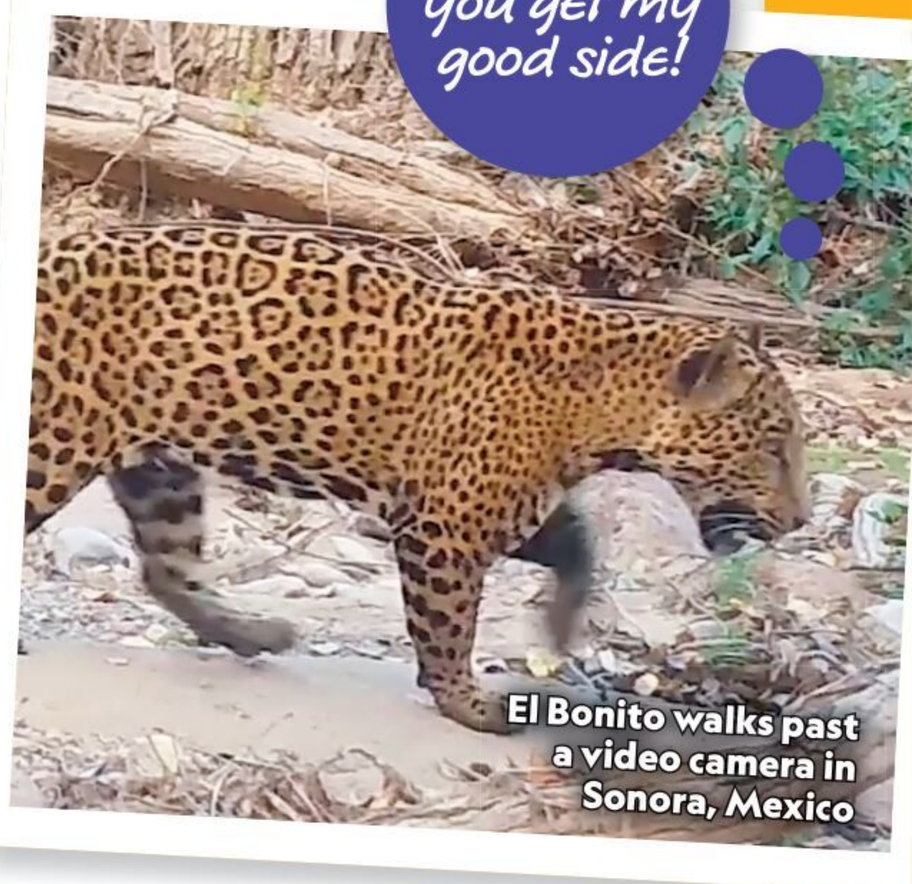
Sonora, Mexico

When a **young jaguar** named **El Bonito** strolled up to a **camera trap** in **January** last year and **sniffed the lens**, scientists were super excited to see the cat – whose name means '**the beautiful**' in **Spanish** – so close to the border of **Arizona** in the **USA**. Why? Because it could be a sign that jaguars are **reclaiming old territory**.

Jaguars once **roamed throughout Arizona and New Mexico** in the USA, before **hunters** wiped out the entire U.S. population over the past century. But for the last **15 years**, conservationists in **Sonora** – a state in **Mexico** that borders those two U.S. states – have been working to **protect jaguar habitat** and keep the cats alive.

Although **male** jaguars occasionally cross into the USA, the cats can only make a comeback if **females** cross over, too. The problem? Female jaguars **rarely travel** far from their **mothers' home range**. So the discovery of a **young jaguar** like El Bonito, who **still sticks close to mum**, might mean that **his mother is close by** – and exploring **new** territory. Fingers (and paws) crossed!

Comeback Critter: Jaguar text adapted from a March 2021 National Geographic Online article. El Bonito © Ganesh Mendez; Red squirrel © Doug Gimesy / NPL / Minden Pictures; Walnuts in truck © Bill Fischer; Henry © Newstead Country Preschool.



THE BIG PICTURE

NAT GEO KiDS' image of the month

COSMIC CLIFFS

Check out this **spectacular starry scene**, one of the incredible new images captured by **NASA's James Webb Space telescope**. It shows a **giant gassy region** in space where **new stars are formed**, roughly **7,600 light-years away** from Earth. (One light-year is equal to **9.46 trillion km** – whoa!)

Named **NGC 3324** (or **Cosmic Cliffs**), the cavernous area has been carved from the **Carina Nebula** (a giant **cloud of dust and gas in space**) by intense **ultraviolet radiation** and **stellar winds** from extremely **massive**, **hot**, **young stars**. Our minds are well and truly blown!

© NASA, ESA, CSA, STScI.

Wildlife HOSPITAL

NG KiDS goes behind the scenes at Australia's busiest animal A&E...

Over **140,000 wildlife patients** have been treated at **Currumbin Wildlife Hospital** in the last **20 years**!

Currumbin Wildlife Hospital in **Queensland**, **Australia**, is one of the busiest **wildlife emergency hospitals** in the world – a whopping **14,000 animals** come in for treatment every year!

HELPFUL HEROES

Here at Currumbin, **seven vets** and **21 nurses** look after the hospital's patients, along with **120 amazing volunteers** – including a small team of **ambulance drivers**. The hard-working staff care for hundreds of Australia's native species – from **marsupials** and **birds of prey** to **rare reptiles**.

These animal patients come in for a huge variety of reasons. Some have been in **road accidents** or **attacked** by **domestic pets**. Others have **flown into windows**, become **caught on fishing hooks** or fallen ill with **diseases**. But **bushfires** and **droughts** – caused by **climate change** – mean more animals than ever are being admitted with **burns**, **starvation** and **dehydration**.

EMERGENCY ARRIVAL!

Just like in a human hospital, when animals first arrive at Currumbin, they're **triaged** (quickly examined) to see if they need **immediate care**. After **blood tests** or **X-rays** (if needed) have been done, the patients are moved onto a **ward** or prepared for **surgery**. Amazingly, unlike in a human hospital, members of the public are **allowed to watch** from behind glass as the staff do their jobs – including **surgical procedures**! This helps promote the amazing work done at the clinic.

KOALA CARE

Koalas, listed as an **endangered species** in **Queensland**, are regular visitors to Currumbin. About **60%** of the koalas admitted here suffer from a **dangerous disease** which causes **blindness**, **infertility** and even **death** – so the

© Nature Picture Library

Greater gliders, the world's **largest gliding marsupials**, can soar for more than **100m** between trees!

Meet seven-month old Milani, the greater glider! She was born and raised at the hospital's sanctuary

Jude the **koala** was **rushed to hospital** after being **struck by a car.** His treatment went well and he's now **back in the wild**!

Adult black flying foxes have a **wingspan** of **1.5m**!

hospital now has a **vaccination programme** to **protect** healthy koalas from infection.

"When I first started working here 20 years ago we only saw about **two or three koalas** per year," says **Dr. Michael Pyne**, senior vet at the hospital. "But now we're admitting **up to 500 koalas** annually. It's heartbreaking." He believes that by vaccinating koalas, the hospital could **help save the species**.

FLUFFY FLYERS

Other common patients are **flying foxes**, a type of bat. One of the most recent arrivals was a cute **black flying fox pup** (right), which was **orphaned** after its mum got **tangled in a fence.** Barbed wire is a big problem for these creatures, whose **wings can get torn** on the **sharp spikes**.

Staff wrapped this baby in a '**mama roll**,' a cloth wrap designed to simulate the feeling of being tucked beneath its **mother's protective wings**. All being well, the pup will be released back into its colony after a few months!

Turn over to find out more about this amazing hospital!

An orphaned black flying fox pup enjoys some milk supplement

This little boobok owl was injured after falling from its nest

A laughing kookaburra recovers in its special cage

In the wild, **kookaburras** catch **snakes**, large **lizards**, **snails**, **insects**, **frogs** and **rodents**.

BIRD ALERT

During the **warmer months** of the year, **baby bird admissions** soar, as this is when **storms** can **blow young fledglings** (birds with newly-grown **flight feathers**) out of their nests. After treatment, staff must try to reunite injured young birds with their **mothers** as soon as possible.

"There's a **myth** that baby birds won't be accepted by their parents if they've been **touched by a human**, but it's not true," says Dr. Pyne. "We ***can*** successfully reunite a baby with its parents up to two weeks after separation." In fact, in 2021, **70% of chicks** at the hospital were reunited with their parents. Great!

CROOK KOOKABURRAS

When **male kookaburras** – the **world's largest kingfishers** – come in for treatment, it's another **race against time** to get them back to the wild. "If they're gone too long, a different male can **take their territory** and it may not be possible to reclaim it," explains Dr. Pyne.

His staff once treated a kookaburra that had a **large metal skewer** lodged in its throat. The vets think it may have happened when someone tried to feed the bird meat from the BBQ tool. Gulp! Thankfully the scary skewer was removed under anaesthetic.

DEDICATED DAYS

Alongside emergency work, each day of the week is **dedicated to a different group of animals.** Monday is '**turtle day**', while Tuesday is given over to the care of **lorikeets**. **Koalas** are the main focus every Wednesday, and on Thursdays the

© Nature Picture Library

Wedge-tailed eagles are Australia's **largest birds of prey** – they can have a **wingspan** of over **2.3m**!

Staff treat this wedge-tailed eagle for a fractured wing

Feathertail gliders are the world's **smallest gliding mammals**. Despite being **mouse-sized**, they can **soar 25m** through the air!

A tiny feathertail glider is given a glucose drink

waterbirds get their weekly health check and pond clean. **Friday** is **raptor day**, when **birds of prey** at the centre have their check-ups. The staff also regularly inspect the **incubators**, which house the eggs of **birds**, **reptiles** and **amphibians**. The **ultimate aim** is to **release each animal back into the wild** once it's made a full recovery.

PUBLIC TO THE RESCUE

Sadly, the **2019–2020 bushfires** killed or displaced over **three billion** Australian animals. But something **positive** also came out of the disaster – more people are now **looking out** for **wildlife in need** and **reporting animal emergencies**, so Currumbin Wildlife Hospital is busier than ever!

"People now **realise** that **more needs to be done** to ensure Australia's animals are around in future," says Dr. Pyne – and that's really *healthy* news!

AWESOME AUS

Flinders Rise

William Godward

This stunning **stars-and-sunset composite shot**, taken in the **South Australian outback**, is a standout image in the competition's **Astrophotography** category. "I love how the **Milky Way** is perfectly positioned with the silhouette of the ridge line," says William. We agree – it's *out of this world*!

The **Milky Way galaxy** contains **hundreds of billions** of **stars** – including our **sun**!

Kangaroos can move as fast as some **racehorses**!

Find out more about kangaroos on page 22

Abstraction of an Icon

Cian O'Hagan

Despite the **blur**, the identity of this speedy creature is unmistakable! **Seventeen-year-old Cian** spotted the **kangaroo** while he was climbing along rocks at **Friendly Beaches** in **Tasmania**. "I used a **slow shutter speed** to obscure its form and capture the **power**, **grace** and **speed** of this **national symbol**," he says. Whoosh!

STRALIA

Take a tour of this megadiverse country with these cool pics shortlisted in the *Australian Geographic Nature Photographer of the Year* competition!

Eagle in the Storm

Simone Caprodossi

Shooting in the **waves** is no easy task! Photographer **Simone** had to **cling onto the rocks** to avoid being swept away by the powerful **swell**, but after several dives he finally captured this **spotted eagle ray** playing in the surging water at **Julian Rocks**, **Byron Bay**, **New South Wales**. It looks like an **eagle *bird*** flying out of a mountain storm!

Spotted eagle rays can be almost **3m wide!**

From Farm to Plate

Jayden O'Neill

Oof – nature can be **brutal**! Using a **drone camera**, **Jayden** captured the moment this **saltwater crocodile** rose up from the murky waters of **Corroboree Billabong** in Australia's **Northern Territory** and snatched a **farm animal** in its mighty jaws!

Saltwater crocodiles are the **largest reptiles** on the planet!

Even when **dead**, trees play a **vital role** in the **eco-system**!

Tree of Life

Julie Kenny

This beautiful **drone shot** taken in **Western Australia** shows a **fallen tree** surrounded by **sheep tracks**.

"It made me think about the **connectedness** of all things," says photographer Julie. "The beginnings, endings and cycling of life."

Camp Hosts

Ethan Mann

Woylies are **critically endangered**, so photographer **Ethan** was surprised to find them around his **campsite** in **Dryandra Woodland National Park**, **Western Australia**! He captured this cute shot by setting up a **motion-triggered camera** next to the fire pit where they **scavenged** for dinner crumbs.

Also known as **brush-tailed bettongs**, these rare **marsupials** have been decimated by **foxes**.

Unnatural Habitat

William Gladstone

With their **natural habitats** of **seagrass**, **soft coral** and **sponges disappearing**, many **seahorses** are making **homes** among submerged **urban structures** instead. **William** spotted this **big-belly seahorse** living on a **swimming enclosure net** in **Sydney Harbour**.

The **largest seahorse** in Australian waters, the **big-belly** can grow up to **35cm in length**.

Found throughout Australia, these birds of prey feed mainly on **house mice**.

Black-Shouldered Kite

Robert Woodbury

"I love the **tension** of the image, the wings set high as the kite comes to land on this slender stick," says photographer **Robert**, who observed this **black-shouldered kite** at **Herdsman Lake**, **Western Australia**, over a number of weeks. The question is, did it make it? What do you think?

Like This, Dad?

Ethan Mann

Male southern cassowaries not only **incubate the eggs**, they then spend **nine months** caring for their fluffy young, **teaching** them which foods to eat. **Ethan** captured this chick (right) being shown how to scoff **cassowary plums** in the **Daintree Rainforest**, **Queensland** – but the youngster was still **too small** to **swallow** them!

By eating **fruit**, **cassowaries** help **spread the seeds** of over **150 plant** and **tree species**!

Octo-Loo

Sam Glenn-Smith

Local **divers** in **Rye**, **Victoria**, transformed trash into treasure when they created an **artificial reef** out of **shopping trolleys** and other **rubbish**. Within days it had become home to a significant number of **pale octopuses**. Photographer **Sam** captured this one curled up cosily inside an **old toilet**!

Pale octopuses have **sharp spikes** of skin on their bodies that help **camouflage** them.

Feeling A Bit Green

Peter Abery

Photographer **Peter** chanced upon this **Australian green tree frog** in an unlikely ***urban* setting** – downtown **Bellingen** in **New South Wales**! We love how the critter's **vibrant green shade** matches the **neon shop sign**, but look a little closer and you can see the poor frog is covered in **fluff** and **rubbish** from its early morning trek along the pavement. Oh no!

Despite their name, **green tree frogs** are often found living in and around **people's homes**!

Check out all the shortlisted snaps at the South Australian Museum, Adelaide, from 27 August to 30 October 2022.

The *Australian Geographic Nature Photographer of the Year* competition is managed and produced by the South Australian Museum.

Bet You Didn't Know!

10 cool kangaroo facts to leap off with!

1 Newborn kangaroos, called **joeys**, measure just **2.5cm** – that's about the size of a **grape**.

2 The **red kangaroo** is the world's largest living marsupial, measuring nearly **2m in height** and weighing up to **90kg**.

3 Male kangaroos **fight** for mates and territory – they'll **punch** each other or kick with **both legs** while **balancing** on their tails. Joeys **'box'** for fun.

4 A 'roo's **top speed** is about **56kmph**.

5

Kangaroos belong to the animal family *Macropodidae*, which literally means 'big foot.'

6

These marsupials can leap more than 8m in a single bound – that's the length of six ten-year-old kids lying head to toe!

7

Joeys leave the protection of their mum's pouch for good after about eight months inside.

8

About 15,000 years ago, a giant kangaroo named *Procoptodon goliah* thudded over Australia's plains. It measured over 2m in height and weighed up to 230kg – the same as four washing machines.

9

Most kangaroos are left-handed.

10

Tree kangaroos, which live in the forests of northern Queensland, Indonesia and Papua New Guinea, can leap 18m from the canopy to the ground.

© Getty Images UK.

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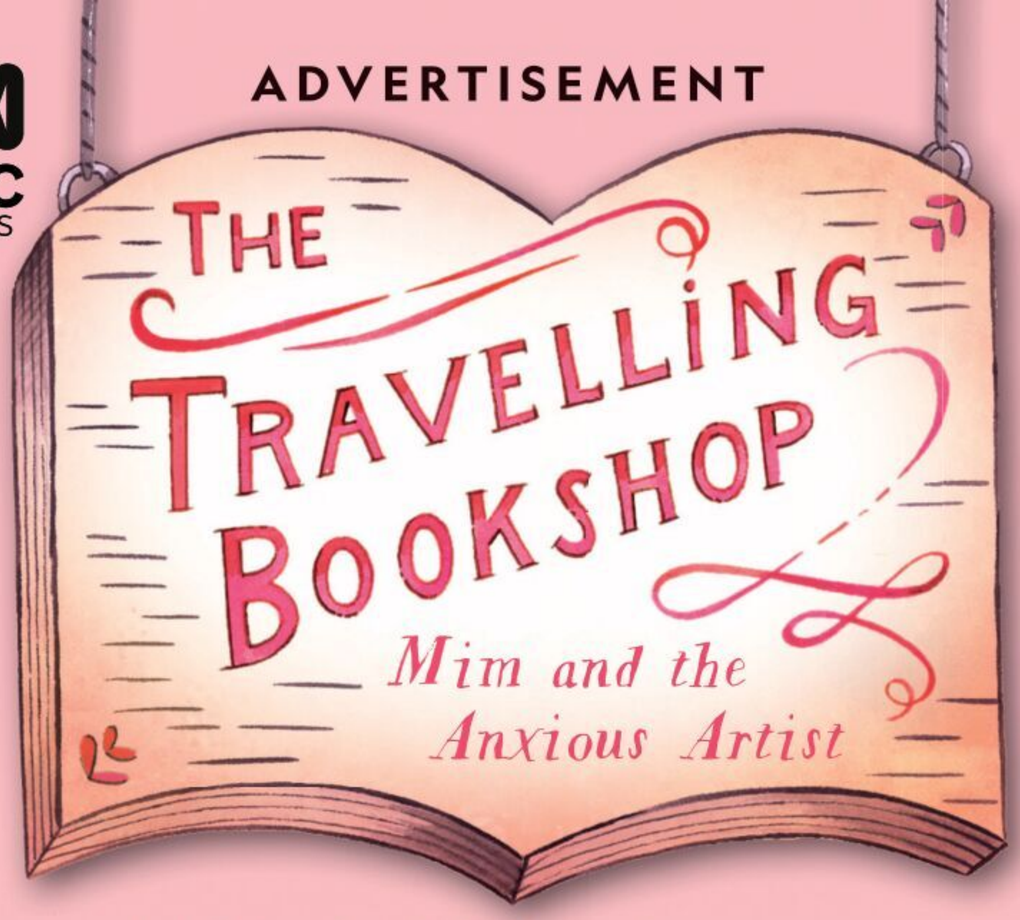
ABC BOOKS



The right book might just change your life…

Mim Cohen has a lovely life roaming the world with her **dad** and **brother** in their amazing **travelling bookshop**, led by their **horse Flossy**!
In **book three** of this charming series, Mim arrives in elegant **Paris**, **France**, where she meets **Pierre**, a **talented but anxious artist** who cannot bear to **give up his paintings** – even to sell them! It's making him **miserable** and **poor**, and it's making his **customers cross**. Can Mim find the right book to turn him into a **successful artist** and make him truly **happy**?

You'll be enchanted by this **gentle story** about the power of the **perfect book** to **change your life**!

READ THEM ALL!

Collect all the books in this special series…

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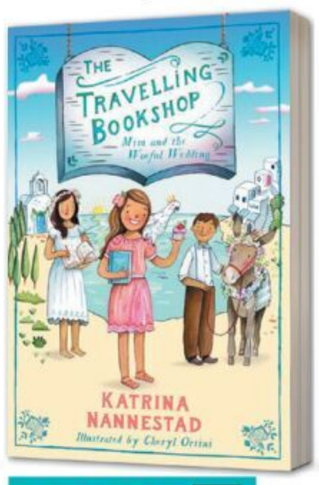
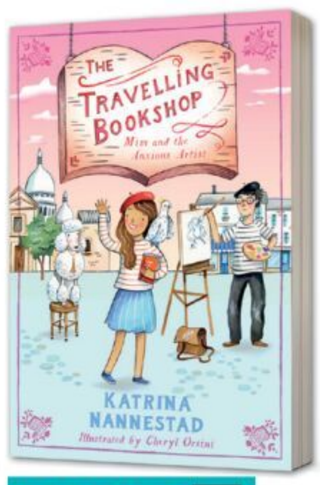


READ IT ☐



READ IT ☐

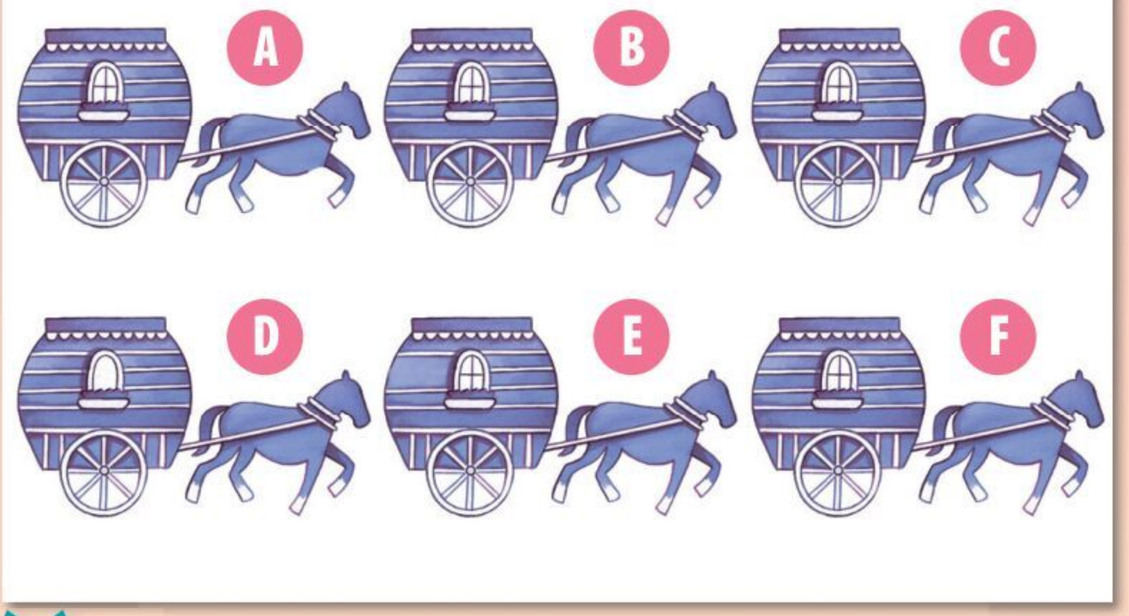
FOUR FANTASTIC FRENCH FACTS!

1. **Paris**' famous **Eiffel Tower** was originally built for the **1889 World's Fair**. The **300-m-tall** monument was supposed to be **torn down** after **20 years**!
2. In **2016**, France became the first country in the world to **ban supermarkets** from **chucking away** or **destroying their unsold food**, instead making them **donate it** to **charities** and **food banks**. Bon appétit!
3. France is the world's **most visited country**. It welcomes around **90 million tourists** each year – not bad considering its population is just over **67 million**!
4. Doctors in France carried out the world's first **face transplant** in **2005** and the first transplant of a **fully artificial heart** in **2013**. Très bien!

PAIR THE PICS!

Below are **six pictures** representing Mim's terrific **travelling bookshop and her horse Flossy**.
Can you spot which **two are exactly the same**?

Answers on page 49



WIN!

THE TRAVELLING BOOKSHOP SERIES

We're giving **three readers** the chance to win **all three books** in ***The Travelling Bookshop* series**.
For your chance to win, just answer this question…

Q What is the French word for 'book'?
a) Legume **b)** Lundi **c)** Livre

Scan this QR code or enter at **natgeokids.com** by **20 October**!

NATIONAL GEOGRAPHIC KiDS

SPECTACLED FLYiNG FOX

DID YOU KNOW?

Named for their fox-like **pointy snouts** and **large ears**, and pale **eye markings** that resemble **glasses**, these **fruit bats** snack on the **nectar** and **pollen** of **eucalyptus blossom**. They can fly over **70km** each night **foraging** for food!

© Getty Images UK.

NATIONAL GEOGRAPHIC KiDS

QUOKKA

DID YOU KNOW?

These **cat-sized marsupials** often look like they're **smiling** because of their **small jaws** and **protruding teeth**!

© Getty Images UK.

DID YOU KNOW?

Male splendid fairy-wrens only grow their **flashy bright blue feathers** during **breeding season** – the rest of the time these Australian birds have **dull brown plumage**!

NATIONAL GEOGRAPHIC KiDS

SPLENDiD FAiRY-WREN

© Getty Images UK.

NATIONAL GEOGRAPHIC KiDS

FRiLL-NECK LiZARD

DID YOU KNOW?

When **threatened**, this Aussie **reptile** raises its **30cm frill**, rises up on its **hind legs** and **hisses**. If the attacker still isn't deterred, the **90cm-long** lizard will turn tail and leg it, **running upright** like a person!

© Getty Images UK.

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MING & MARIE
SPY FOR FREEDOM

Travel through time with Ming in this exhilarating series as she meets incredible girls who've helped change the course of history!

Twelve-year-old Ming Qong is convinced that girls throughout history have **changed the world.** But it's only when she's thrust **back in time** to **Belgium** during **World War I** that she finally has **proof**! Ming ends up in a **burning cellar** where, thankfully, she's **rescued** by a young girl named **Marie** who is an **experienced spy**!

Marie is involved with a **female secret resistance group** who risk their lives outwitting the **German troops**. But Ming now faces a tough choice: will she **risk her own life** to join the resistance and send **coded messages**?!

You'll love this book in **Jackie French**'s empowering and thrilling series about **inspiring girls** who helped **shape our world.**

COLLECT BOTH BOOKS!

In ***Ming & Flo Fight for the Future***, Ming travels to **Australia** in **1898** where she's transformed into a girl called **Flo Watson** whose aunt is fighting for **women's rights**…

WIN!

THE GIRLS WHO CHANGED THE WORLD SERIES

We're giving **three readers** the chance to nab copies of ***Ming & Marie Spy for Freedom*** and ***Ming & Flo Fight for the Future***! For your chance to win, just answer this question…

Q What is the capital city of Belgium?
a) Brussels **b)** Birmingham **c)** Bangkok

Scan this QR code or enter at **natgeokids.com** by **20 October**!

Angus&Robertson
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harpercollins.com.au

FAMOUS FEMALE SPIES

Check out these **three** inspiring tales of **female spies** from the **history books**…

1 VIRGINIA HALL

American spy **Virginia** went **undercover** in **France** as an **old lady** during **World War II**. She even **filed down her teeth** to make her disguise more convincing! After being found out, Virginia managed to escape over the **snowy Pyrenees mountains**, despite having a **wooden leg**. Impressive!

2 HARRIET TUBMAN

After **escaping** from a life of **slavery** age 27, **Harriet** dedicated her life to **freeing others**. When the **American Civil War** broke out in **1961**, Harriet became head of a **Union Army spy network** and even **led an army** of **150 African American soldiers** in a daring mission to **rescue 700 slaves**!

3 NOOR INAYAT KHAN

The daughter of **Indian royalty**, **Noor** was a **children's books author**. But when **World War II** broke out, she became a **radio operator** for a **resistance network** in **Paris**, relaying **vital messages** back to **London**. Despite eventually being **captured**, she **refused to give up any information**.

Spy pictures © Getty Images UK

THE BIG INTERVIEW

Australia's top frog expert Dr. Jodi Rowley tells us why she loves these cool creatures!

Name: Dr. Jodi Rowley

From: Sydney

Job: Frog biologist and National Geographic Explorer

Known for: Discovering 20 new frog species in Southeast Asia and Australia, and being lead scientist for the Australian Museum's FrogID project.

Frogs are **amphibians**, which means they're **adapted** to life on **land *and*** in the **water**. After spending their early days as **tadpoles**, using **gills** to breathe **underwater**, they **metamorphose** (change) into adults with **air-breathing lungs**.

I fell in love with frogs – they're amazing!

Frog **tongues** are **175 times stickier** than human tongues!

WANT TO BE A *FROG-SPERT*?!

Here are Jodi's top tips for becoming a **frog biologist**…

ONLINE: Learn about frogs at **natgeokids.com/au/frog-life-cycle/** and explore **Australia's frogs** on the ***FrogID*** website, **frogid.net.au/**

WATCH: Jodi's **TEDxYouth** talk, ***The Race Against Frog Extinction*** and **BBC Earth**'s ***Best of Frogs***, both available on YouTube.

READ: ***In Search of the Golden Frog*** by **Marty Crump**, one of Jodi's heroes! Plus **Tim Halliday**'s ***The Book of Frogs*** is a great guide to frogs around the world.

DO: If you want to **explore far away places** one day, then get some **camping** experience – your **garden** is a great place to start! Join local **conservation groups** that look after nearby **waterways** and help **protect frog habitats**.

Main Picture © Tim Cutajar; Frogs © Jodi Rowley; Jodi with head torch © Joanne Ocock; Jodi fact file pic © Stuart Humphreys / Australian Museum.

Vampire flying frogs live in dense forest more than 1,500m above sea level

Helen's flying frogs use their hands, feet and special flaps of skin to glide down from the canopy!

Hi Jodi! When did you first get into frogs?

Not until I was **18**! I grew up in the **city** in **Sydney**, so it wasn't 'til I studied **environmental science** at **university** that I first went out into a **stream** at night with a **head lamp** and saw frogs. I almost couldn't believe they were real – they were so precious and **shimmery**, with these **big eyeballs** and **toe pads**. I kind of **fell in love** with them there and then!

You've spent a lot of time in the rainforests of Southeast Asia on the lookout for species new to science. What was that like?

I'm not going to lie – studying frogs can be **really hard**! We'd work in the middle of the forest during the **monsoon season**, because that's when the **ponds** and **streams fill up** and **frogs are most active**. It **pours with rain** most of the time, and we'd be **hiking up mountains** in the day, **wading through streams** at night, and dealing with **blood-sucking leeches**, **biting insects** and **flooding**! You **never really get dry** – and once our camp nearly got washed down the side of a mountain during a rainstorm!

Sounds, er… challenging?

Although it can be incredibly difficult – especially when you think of your friends back home in their **cosy beds** – it's also where I've had the **best experiences** of my life! It's a **privilege** to see all these **amazing wild places** and **creatures**, and you form really great **friendships** with your colleagues.

"I named a flying frog Helen, after my mum!"

How do you track down frogs in the rainforest?

Frogs are most active in the rain at night, so we wear head lamps to help see the **reflections of their eyes**. It's sometimes difficult to tell frog eyes from **insect eyes**, but one of the tricks is that insect eyes are very **sparkly** – so if you move your head torch from side to side and the **reflection twinkles**, then that's often a **spider**. Frog eye reflections are more of a **dull pinkish colour**. You'd be surprised how many spiders are out there in the rainforest!

Jodi finding frogs with her head lamp!

Creepy!

The other way we find frogs is by their **calls**. **Every species has a different call** and as it begins to get dark, you start to hear '***reep reep***' and '***wroooop***', and all their **unique noises** in the forest around you. And so, **just by listening**, you'll often be able to locate them.

Why do frogs call?

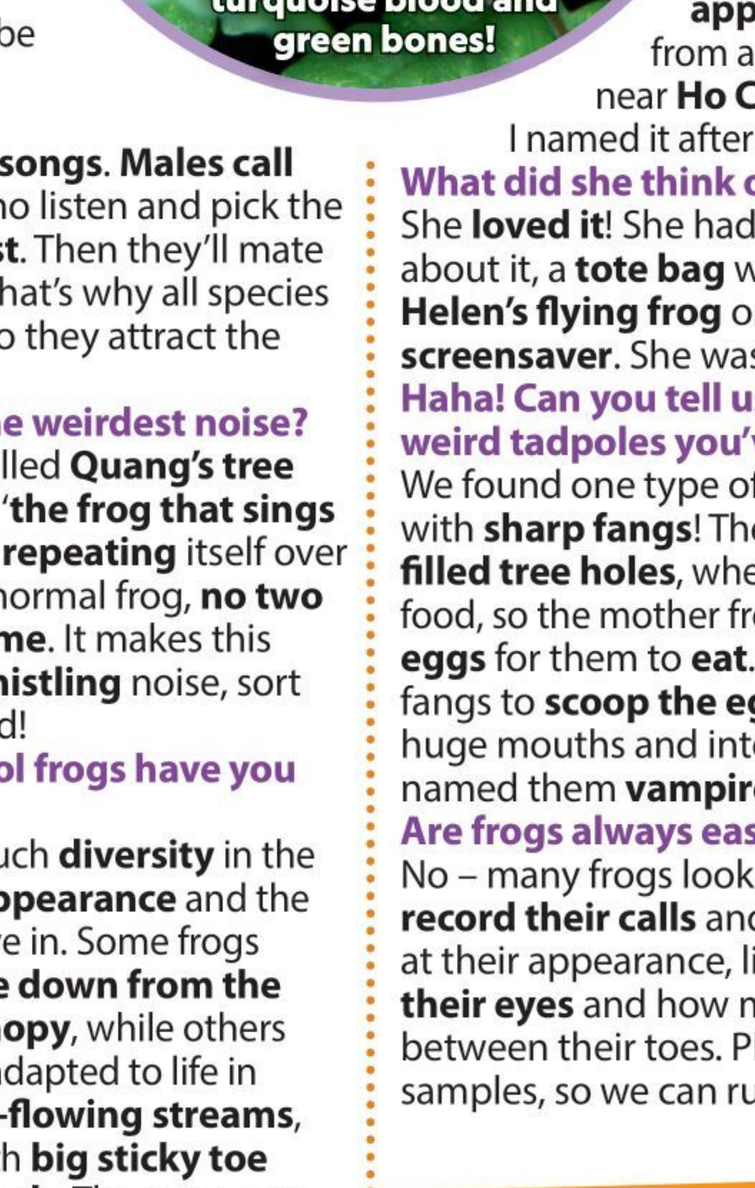
The calls are like **love songs**. **Males call** to **attract females** who listen and pick the male that **sounds best**. Then they'll mate and have **offspring**. That's why all species need a unique call – so they attract the right females!

Which frog makes the weirdest noise?

A frog I discovered, called **Quang's tree frog**, is also known as '**the frog that sings like a bird**.' Instead of **repeating** itself over and over again like a normal frog, **no two of its calls are the same**. It makes this strange, **tweeting**, **whistling** noise, sort of like a crazy little bird!

Wow! What other cool frogs have you come across?

So many! There's so much **diversity** in the frog world – both in **appearance** and the **habitats** they live in. Some frogs **never come down from the tree canopy**, while others have adapted to life in **fast-flowing streams**, with **big sticky toe pads**. There are even **tadpoles** that can **climb up waterfalls** using their **mouths**! Other frogs live in **dry places** and **spend years waiting for it to rain**! And a lot of people don't know that there are **flying frogs**…



As well as singing like a bird, the Quang's tree frog has turquoise blood and green bones!

FLYING frogs?!

They don't *actually* **fly**, but they have **enormous hands** and **feet** which they use to **parachute out of the trees**. In the forest you'll hear them **gently splat** down into nearby pools! One of my favourite flying frogs is a beautiful **big**, **apple-green** species from a small patch of **forest** near **Ho Chi Minh** in **Vietnam**. I named it after my mum, **Helen**.

What did she think of that?!

She **loved it**! She had a **Twitter** account about it, a **tote bag** with a picture of a **Helen's flying frog** on, and it was her **screensaver**. She was a BIG fan!

Haha! Can you tell us about any weird tadpoles you've discovered?

We found one type of flying frog tadpole with **sharp fangs**! They hatch in **water-filled tree holes**, where there's not much food, so the mother frog lays **unfertilised eggs** for them to **eat**. They use their big fangs to **scoop the eggs** through their huge mouths and into their bellies. We named them **vampire flying frogs**!

Are frogs always easy to tell apart?

No – many frogs look really similar, so we **record their calls** and look **really closely** at their appearance, like the **colour of their eyes** and how much **webbing** is between their toes. Plus, we take genetic samples, so we can run **DNA analysis**.

Check out the hot pink and yellow thorny tree frog Jodi spotted in Vietnam!

Hop over the page to find out more…

There are at least 247 frog species in Australia, each with a unique call. This one is called the moaning frog!

The green and golden bell frog is one of Australia's most threatened frogs

Are any frog species endangered?
Unfortunately, frogs are some of the **most threatened** animals on Earth. We've **lost** probably **hundreds of species** already and, of the **7,000 species** we know about, almost **half are threatened with extinction**.

Oh no! Why are they so vulnerable?
They **breathe partly through their skin**, and they **drink through their bellies**, which means they're affected by **pollution** in the **air** and **water**. They're very **sensitive** to **disturbance** and they **can't regulate their body temperature** – so when it's cold, they're cold, and when it's hot, they're hot. And this means they're **vulnerable to climate change**. Plus, for the last few decades they've been threatened by a **deadly amphibian fungus**.

They're going through a lot! What would happen if frogs went extinct?
Frogs are a really important part of **healthy ecosystems**. So, if species disappear – as has happened in parts of **Central America** – it impacts everything. Streams begin to **clog up with algae** as there are no tadpoles to eat it, and all the animals that eat frogs, like **snakes** and **birds**, start to **starve** and **disappear** as well.

Oh no! What about humans?
Frogs **benefit people**, too – they help **keep our waterways clean** and **mosquito numbers down**, and they have **antibacterial** and **anti-fungal chemicals** on their **skin** that could be used in **human medicine**! Secretions from frogs like Australia's **red-eyed tree frog** and **green tree frog** are being **studied** right now for use in human medicine – such as **antibiotics**. So for really **selfish reasons**, we need to keep frogs around – because next time we have a **new illness**, it could be a frog that helps us get better! Every time we lose a frog to extinction, we lose that potential benefit.

"Frogs are some of the most threatened animals on Earth."

How are Australian frogs doing at the moment?
Sadly, we've **lost at least four species of frog** and another **40 or so are threatened**.

Are there any ways that kids can help them?
If you've got a **garden** or **backyard**, try to make it a bit more **frog friendly**. Keep your **cats indoors at night** so they don't eat them, plant some **native plants**; and, if you're able to, build a **frog pond**, or a tree frog hotel. And of course you can use the ***FrogID* app** to **record frog calls** in your area and help scientists like me get a better picture of where frogs are and how they're doing!

Can you tell us more about this cool citizen science app?
FrogID is all about people power! Australia is **enormous**, and there are only a handful of **frog biologists**… but with the app, ***everyone*** with a **mobile phone** can record frog calls and give us the information we need to help save frogs!

Cool! What have you found out so far?
Since the app was launched 4.5 years ago, people across Australia have gathered **700,000** records of frogs – that's more than **double the number** we had before the app! It's been a complete game changer.

What have you learned?
We're **discovering new species**; we're getting a better understanding of **where our frogs are**, so that we can work out which habitats we need to better protect; we're learning how **urbanisation** impacts frogs, and we're even looking at things like frog **accents**! We can also find out how frogs cope after extreme events like **bushfires**, **droughts** and **floods**.

How *did* frogs cope in the awful 2019–2020 bushfires?
When those fires ripped through the frog habitats, I remember thinking, 'This is **devastating** – all those frogs are going to go up in a puff of smoke.' But thanks to people using *FrogID* in their local area, we learned that many of these tiny frogs were able to survive. It was so heartening!

Go, froggies! And thanks for the chat, Jodi!

Frogs are great indicators of environmental change.

Could green tree frogs' skin secretions be used in medicine?

Frogs come in all sorts of sizes. Some are as big as this magazine, but others are so small that *several* could fit on your fingernail!

Jodi loves teaching kids about frogs!

Jodi with kids © Nick Langley / Australian Museum; All others © Dr. Jodi Rowley.

Turn to page 34 to meet some cool Aussie frogs!

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FANTASTiC

HOW TO HELP FROGS!

*I need **YOUR help** to **save frogs!** The best way is with the **FrogID app.** Here's how it works...*

1. Download the ***FrogID* app** (get your parent's permission first!)
2. Head outside and **record frog calls** using the app. You might hear some of the frogs on this page.
3. **Share** your **froggy finds** with **scientists** (including **Jodi**!) who will then **identify** the calls.

TOP TiPS!

- Frogs are most active **just after rain**.
- They're usually noisiest in the **first few hours after dark** – so take a **torch**!
- If you want to **catch a glimpse** of them, look for the **reflections of their eyes**!
- **Spring** is the best time of year for most frog species – but some can be found all year round and in different types of weather.

Whether you record a frog croaking in your **backyard**, or something unusual while **camping**, it's ALL useful to scientists!

SOUTHERN CORROBOREE FROG

Habitat: Mountain bogs
Jodi says: I think these cool tiny frogs look a bit like **liquorice allsorts** – but they're actually **poisonous**, and produce a bit of toxin on their **skin**!

HOLY CROSS FROG

Habitat: Semi-arid grasslands
Jodi says: If threatened, holy cross frogs produce a sticky **goo**. Scientists could use it for **human knee surgeries** in the future!

Holy cross frogs can be recognised from their very **round shape** and beautiful **bright dots** – almost like **contemporary Aboriginal art**!

EASTERN BANJO FROG

Habitat: Slow-moving waterways
Jodi says: I love the distinctive "*bonk*" call of this big **burrowing frog**! Because of this, it has the other excellent common name of '**pobblebonk**'!

FROGS

Scientist Dr. Jodi Rowley tells us about her fave Australian frogs, the weird noises they make, and how to help them!

Every single species of frog has a **unique call**!

RED-CROWNED TOADLET

Habitat: Open forests
Jodi says: These beautiful bejewelled ground frogs are only found around Australia's biggest city, **Sydney**!

GREEN TREE FROG

Habitat: Ponds, creeks and trees
Jodi says: The good old **green tree frog** is such an iconic frog. It's also known as the **dunny frog** because in the outback they often get into **toilets**!

WATER-HOLDING FROG

Habitat: Dry grasslands
Jodi says: These creepy-looking frogs can **sleep underground** for months, or even **years**, waiting for **rain**! They build a **cocoon** from layers of **their own skin and fat**, and because they look so weird, people who dig them up sometimes mistake them for **fossils**!

MOTORBIKE FROG

Habitat: Swamps and ponds
Jodi says: I'm a big fan of the **motorbike frog** – it **sounds** just like a **motorbike changing gears**! Many of our frogs are named after what they sound like.

awes8me

STRIKING SHIPWRECKS

Unexpected events meant trouble at sea for these unlucky vessels...

1 REFUGE IN THE REEF

The steel-built **S.S. Yongala** sank during a **cyclone** in **1911**, in the middle of what's now **Australia's Great Barrier Reef Marine Park**. The popular diving spot has become an underwater refuge for **oysters**, **sea fans** and **damselfish**.

Corals and **small fish** start turning a shipwreck into an **artificial reef** in just a **few weeks**!

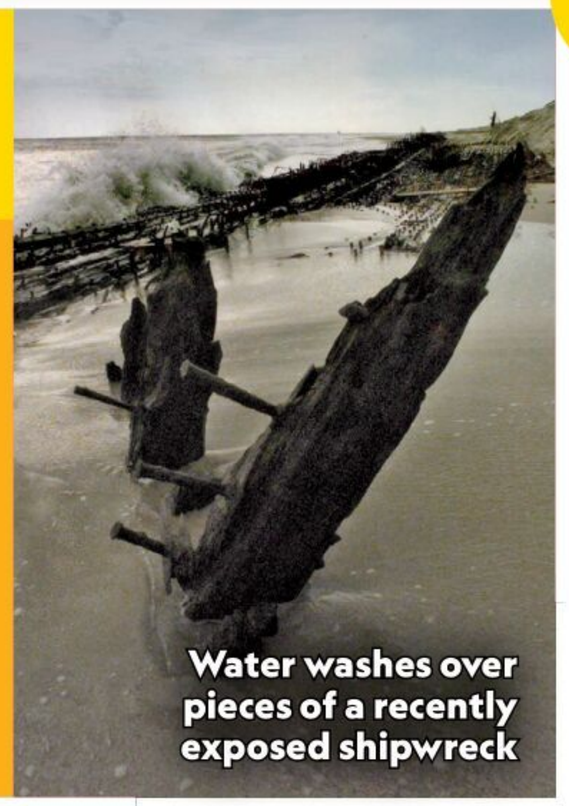
2 SMUGGLERS' WRECK

Chased across the **Ionian Sea** by the **Greek Navy** in **1980**, this freighter, called the **Panagiotis**, ran aground on the Greek island of **Zakynthos** during a storm. The stranded crew of **smugglers** supposedly **abandoned their ship** to avoid capture by the authorities, leaving behind a now-**rusty souvenir** for beachgoers.

CHECK OUT THE BOOK!

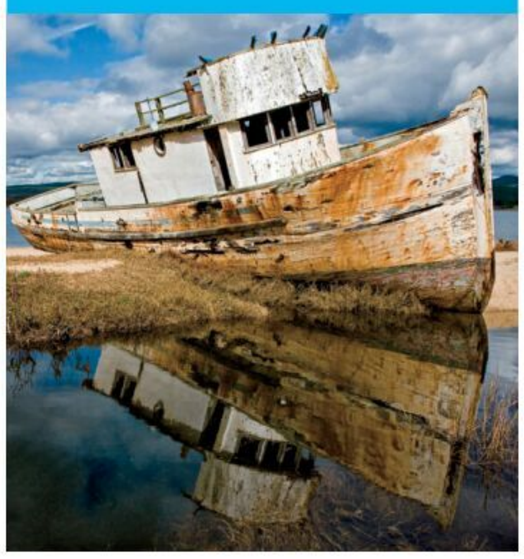
3 DIGGING FOR HISTORY

Treacherous currents, **storms** and **sandbars** have wrecked an estimated **1,000 ships** off **Hatteras Beach** in **North Carolina**, **USA**. When tides and wind pull back the sand, beachgoers and **archaeologists** can explore this so-called '**graveyard of the Atlantic**.'


Water washes over pieces of a recently exposed shipwreck

4 POINT OF PERIL

Just north of **San Francisco** in the **USA**, **Point Reyes** reaches **16km into the ocean**, waiting for ships like a **treacherous claw**. This **rocky coast** has claimed more than **50 shipwrecks**, and its **bad weather**, **unforgiving currents** and **jagged shorelines** continue to **snag small vessels** like the one below every year.

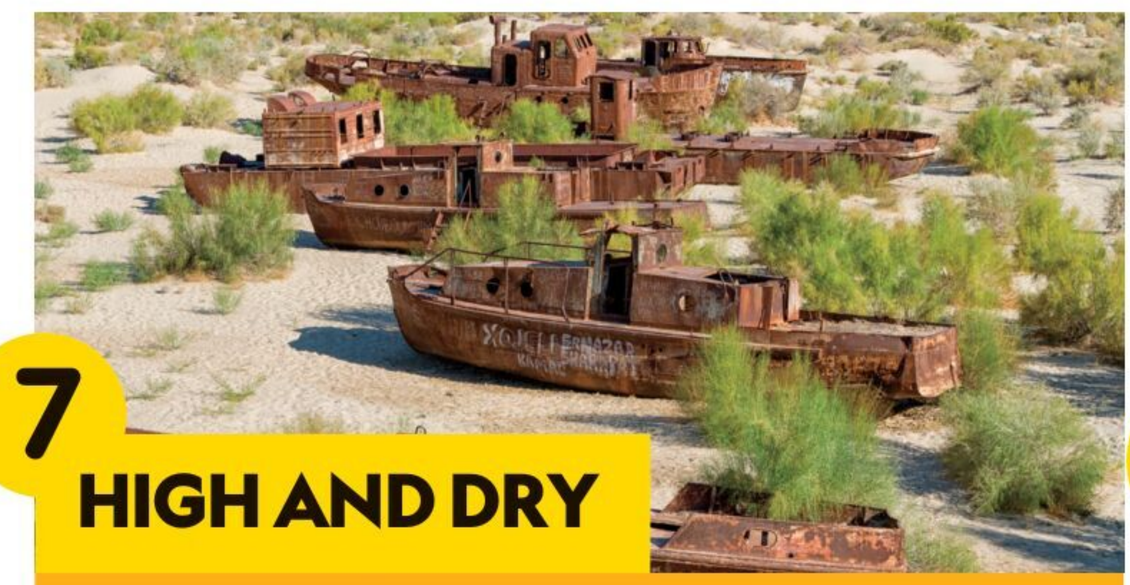


5 HIDDEN GIANT

It was one of the **biggest** and most **heavily armed** vessels of the time. But the **Japanese battleship Musashi** finally **caught fire** and **sank** after being hit by many American **bombs** and **torpedos** during **World War II**. The ship remained hidden in darkness for more than **70 years** until researchers spotted it near the **Philippines** in **2015**.

6 THAR SHE BLOWS!

This former **cargo ship** was pulled off course by the **233kmph** winds of **Hurricane Frances** in **2004**. The vessel, called **La Famille Express**, now rests as a **tourist attraction** in shallow water off the coast of the **Turks and Caicos Islands**, near **The Bahamas**.



7 HIGH AND DRY

What happens when you **drain a river**? These boats, moored in what's known as the **Aral Ship Graveyard**, are all that's left of a **small fishing town** in **Uzbekistan**, **central Asia**, after the former **Soviet Union diverted river water** to **irrigate crops**.

8 BURIED BONEYARD

Ships passing **Namibia's Skeleton Coast** in **Africa** must withstand **thick fog**, **strong currents** and **driving winds** that push ships towards shore. Vessels that can't handle these forces of nature become – and *remain* – **stuck in the sand**.

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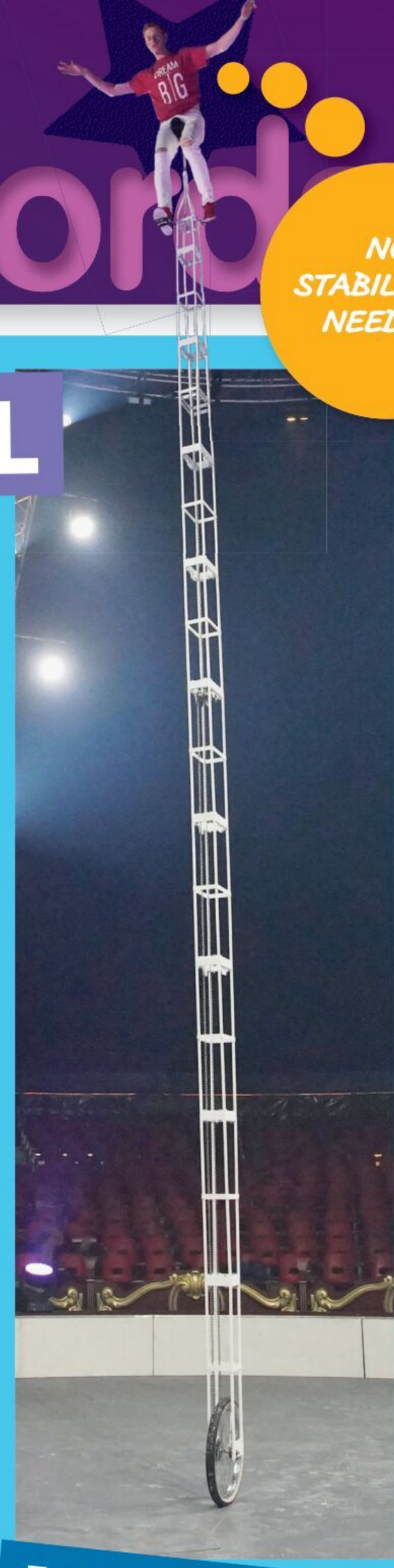
GUINNESS World Records

TORTOISE ROCKS 3D SHELL

When **Fred** the **red-footed tortoise** lost **85% of her shell** in a **forest fire**, kind humans had her back – literally! Volunteers in **Brazil** made her the **world's first 3D-printed tortoise shell** as a replacement! It was created by printing out four sections of **corn-based plastic** (see small pic), which were then joined together and **painted** to appear more **natural**. Fred's new look certainly fooled us!

OCEAN ART SHOW

You'll need a **swimsuit** and snorkel to check out this awesome **art exhibition**! Located off the coast of **France**, the **Cannes Underwater Eco-Museum** is home to **six submerged sculptures** made by **British** sculptor **Jason deCaires Taylor**, who holds the record for the **most underwater art installations**. Jason, who's completed **12** aquatic installations around the world, only uses **eco-friendly materials** in his work. His sculptures are also designed to provide **habitats** for **native plants** and **animals**. Cool!



WHEELY TALL UNICYCLE

Wesley Williams pedalled his way into the record books in 2020 – on the **tallest rideable unicycle**! At **8.87m** tall, Wesley's silly cycle is higher than **15 bikes** stacked on top of each other! No wonder he's nicknamed '**The One Wheel Wonder**.'

Fred, both © Focus On News Agency; Underwater art © Jason Decaires Taylor; Unicycle © Marc Marti Font. Information provided by © 2022 Guinness World Records Limited.

weird but true!

Check out these outrageous facts

JAPAN HAS MORE VENDING MACHINES THAN NEW ZEALAND HAS PEOPLE.

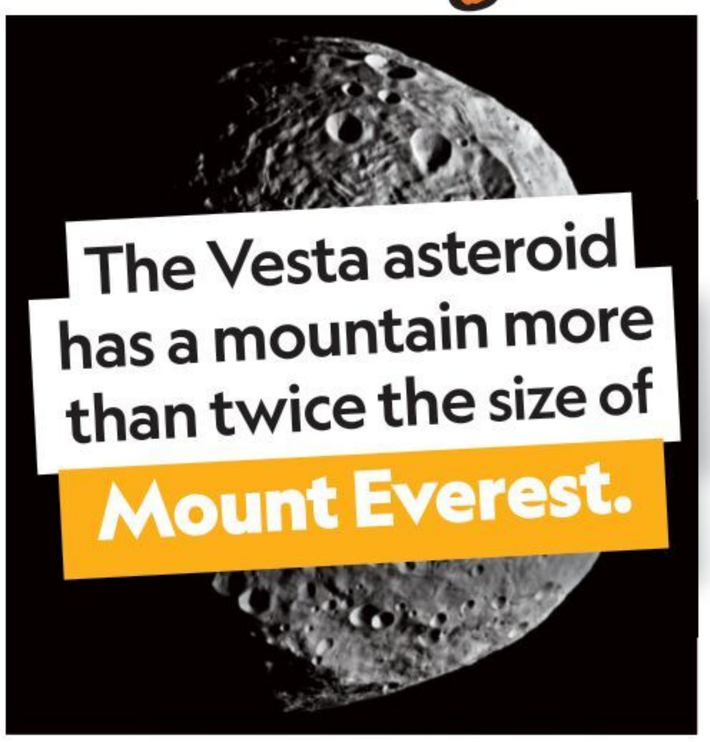
OOLOGY IS THE STUDY OF BIRD EGGS.

KANGAROO RATS CAN MOVE 2.7m IN A SINGLE JUMP.

Pudus – the **SMALLEST TYPE OF DEER** – run in a **zigzag pattern** to escape predators.

AN OCTOPUS CAN DETACH AN ARM ON PURPOSE TO DISTRACT A PREDATOR.

Author Ernest Vincent Wright wrote an **ENTIRE NOVEL** without using the letter **E.**

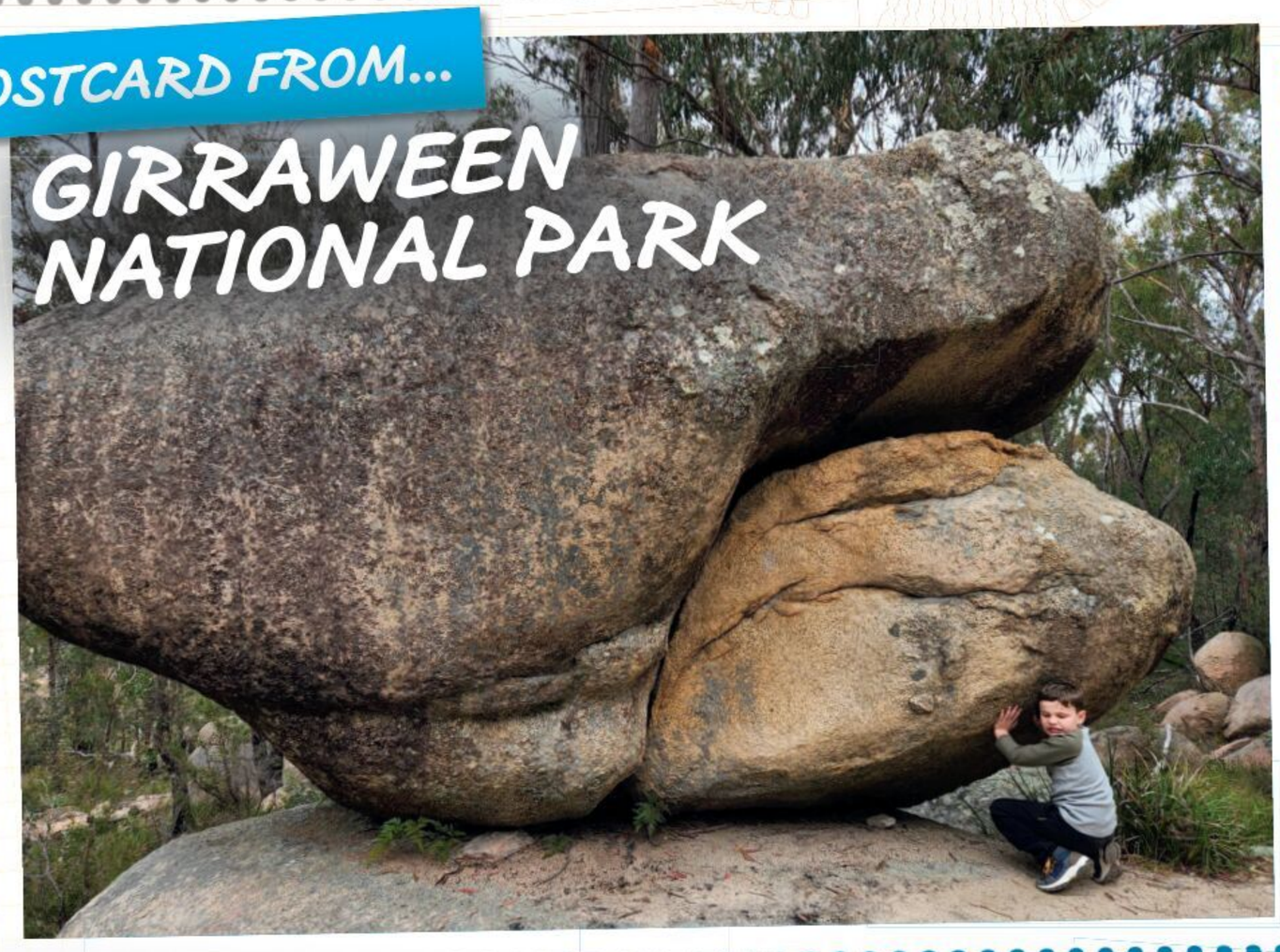


Fingerprints last up to **40 YEARS** on paper.

Pudu © Wegner, Jorg & Petra / Animals Animals; Nest © Alena Brozova / Shutterstock; Kangaroo rat © Michael Durham / Minden Pictures; Vesta asteroid © NASA / JPL-Caltech / UCLA / MPS / DLR / IDA.

JUNIOR EXPLORERS' CLUB

POSTCARD FROM... GIRRAWEEN NATIONAL PARK



Dear Nat Geo Kids,
During the holidays, my family and I drove for three hours to a beautiful place called **Girraween National Park** in Queensland. It's in the **Granite Belt** region which is known for its **large granite boulders**. Here's a photo of me exploring!

I learnt that the word Girraween means '**place of flowers**.' We saw lots of wildlife on the hiking trails, too!

Thank you for making my bed-time reading so enjoyable.

Fletcher, 7

● What a cool trip! We hear the most spectacular flowers at Girraween are in September and October.

ART ZONE!

This month's art is all inspired by the mag!

Hi Nat Geo Kids!
I drew a picture of a **pygmy possum** after I read about the '**comeback critter**' in **issue 85**. They need our help to protect them. They're so **adorable**!

Emaan, 9

● So cool. Thanks, Emaan!

Hello!
I read the article in **issue 86** on sea turtles and wanted to send in my picture of a **turtle**!

Lili, 9

● Cute pic. Thanks for sharing, Lili!

Hi, I was inspired to draw this **hedgehog** from the front cover of **issue 83**! I love **art**, and hedgehogs are my **second favourite animals**.

Olive, 9

● We love these prickly pals, too, Olive. Ace drawing!

Name: Milky
Age: 7
Breed: Maltese
Likes: Food, sleeping, walks, playing with other dogs
Dislikes: Being alone, having a bath
Owner: Jessica, 12

We want to hear from you! Send in your artwork, jokes, craft pics and pet photos. Tell us about your wildlife sightings, hobbies, interests and opinions. A selection of our faves will be printed on this page! Email us at **editorial@ngkids.com.au**
All readers on this page will scoop ***And Everything Will Be Glad to See You***, an **uplifting poetry collection** from **Allen and Unwin**, with **poems for every mood**!

HERO OF THE MONTH

Lucy sold her Pringles pen pots for penguins!

Over the last 18 months I have been **fundraising** for our local **wildlife hospital**. I decided to repurpose old **Pringles containers**, cutting them in half and **decorating** them to sell as **pen holders**. I also planted some plants and looked after them for a few months. In total we raised **$160**. The Wildlife Hospital looks after some of our **New Zealand native birds** such as **kereru**, **tui**, **kakapo** and **penguins**.

Lucy, 12

● Great job, Lucy. They look awesome!

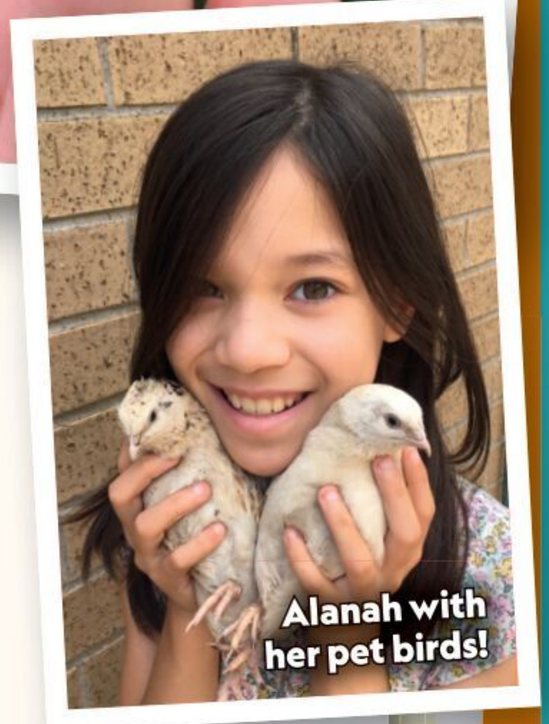
WILDLIFE WATCH

Hi Nat Geo Kids, When I was at my friend's house, I found this **moth** in their garden. It looks just like a **eucalyptus leaf**! It squirted some liquid onto my hand.

Alanah, 10

● Hi Alanah! There are over **22,000** moths in Australia, so we reached out to moth expert **Len Willan** from **Australian Moths Online** to see if he could help! According to Len, the moth from your friend's garden is from the **Geometrid** family, and is an ***Oenochroma vinaria***, more commonly known as the **pink-bellied moth** (although they can be brown, too). These leaf-like creatures are found around southeastern and southwestern Australia. They squirt as a **defence mechanism**, so it must have been a little **scared**!

What is this marvellous moth?


Alanah with her pet birds!

WILD CONSERVATION
with Ben Britton

LET'S MEET THE AARDWOLF

DID YOU KNOW?
In the **Afrikaans** language, 'aardwolf' means '**earth wolf**'!

Where do they live?
They're found in **southern** and **eastern Africa**, in **semi-arid areas**, **open plains**, **grasslands** and **savannahs**.

What do they eat?
The aardwolf is almost exclusively **insectivorous** – feeding on **termites** and **insect larvae**. Rarely, it will feed on **eggs**, **birds** and **small mammals**.

How do they live?
Although primarily **nocturnal**, in **cooler weather** the aardwolf will **forage** during the day and **rest at night** to stay warm. They either live **alone**, with a mate, or in a **small family group** consisting of a mated pair and their young.

How big do they grow?
They weigh **7–10kg**!

How do they communicate?
Through **sound**, **smell** and **sight**. When threatened, they'll **cluck** and **bark**, raise the **mane of fur** on the back of their neck, and emit a **foul-smelling liquid** from their **anal glands**!

© Getty Images UK

Ben's fave fact!
A single aardwolf can consume **200,000 termites** in one night!

To learn more about Ben's conservation work, go to **wildcatcentre.org.au**

FUN STUFF

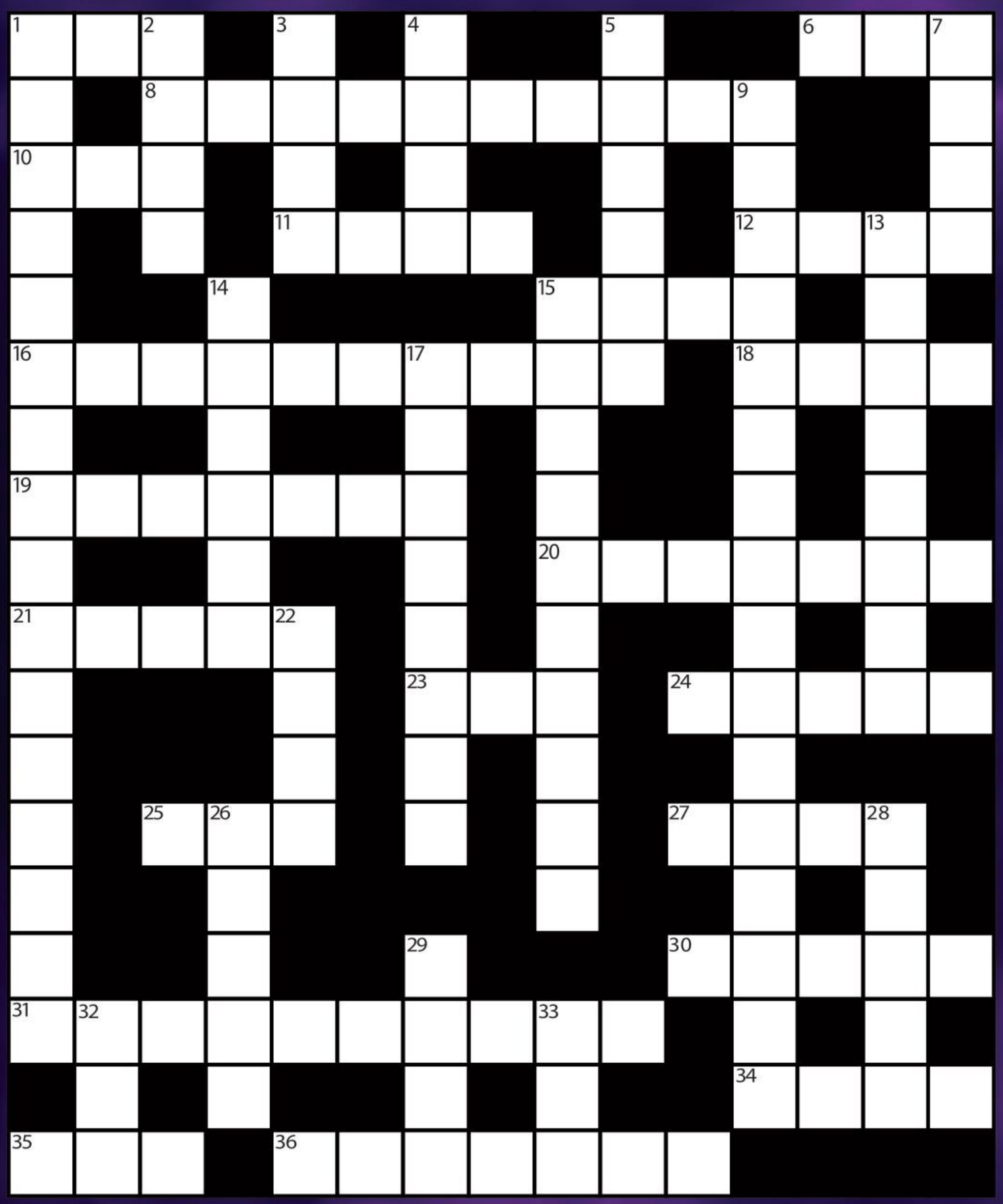
GAMES, LAUGHS AND LOTS TO DO!

Answers on page 49

CROSSWORD!

ACROSS

1 Not a liquid or a solid (3)
6 What eyes allow you to do (3)
8 Group of mammals whose young usually live in their mother's pouch (10)
10 Large flightless bird (3)
11 Consistent pain. What your muscles might do after exercise (4)
12 Some Aboriginal paintings are made up of lots of these (4)
15 Bright, fluorescent colour (4)
16 Food native to Australia, traditionally eaten by the Indigenous people of central Australia (4, 6)
18 Sydney is on Australia's _____ coast (4)
19 A meeting of old friends or family after a long time apart (7)
20 Kangaroos get around by _____ (7)
21 Over 2 million Australians have _____ ancestors from the 'Emerald Isle' (5)
23 Informal name for a kangaroo (3)
24 _____ May. Lead guitarist of Queen (5)
25 Amusing or entertaining (3)
27 Garden storage structure (4)
30 Australian word for toilet (5)
31 Simple sweet snack eaten at birthday parties. See page 48 (5, 5)
34 Furry creature from the *Star Wars* films (4)
35 Bashful (3)
36 Remote, inland area of Australia, more remote than the bush (7)



DOWN

1 The world's largest coral system (5, 7, 4)
2 Overly pleased with yourself (4)
3 Australia's _____ is 7.688 million km² (4)
4 What Australians call a wooded area (4)
5 Someone who grows crops or keeps cattle (6)
7 Hearing organs (4)
9 Famous landmark. Performing arts venue (6, 5, 5)
13 Island state of Australia. Where devils come from! (8)
14 Shoes known as 'flip flops' in the UK (6)
15 Australian soap opera that ended in July after 37 years! Launched the career of Kylie Minogue (10)
17 Capital of Australia (8)
22 Head growth (no Australian animals have them) (4)
26 Famous red rock in central Australia (5)
28 Wild dog (5)
29 Horse speed that's faster than a walk (4)
32 ____ Barty. Aussie tennis player. Also the grey powder left after a fire (3)
33 Also known as (3)

TOP TIP!
If you get stuck on one of the clues, move on to some others. You can go back to it when you've got extra letters!

SYDNEY SPOT THE DIFFERENCE

Can you find the 10 differences between these two Sydney scenes?

Answers on page 49

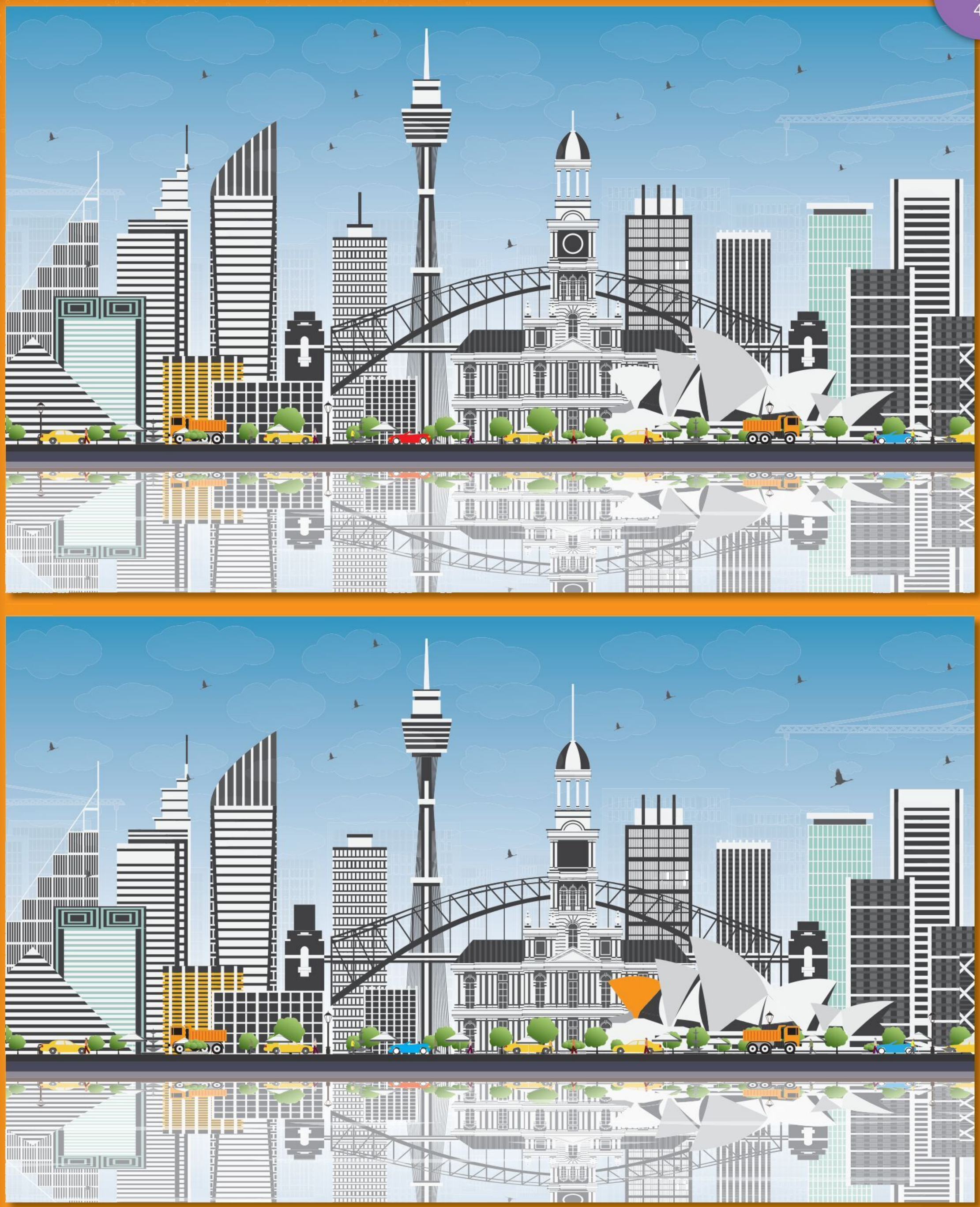


Illustration © Getty Images UK.

BRAIN BOOST

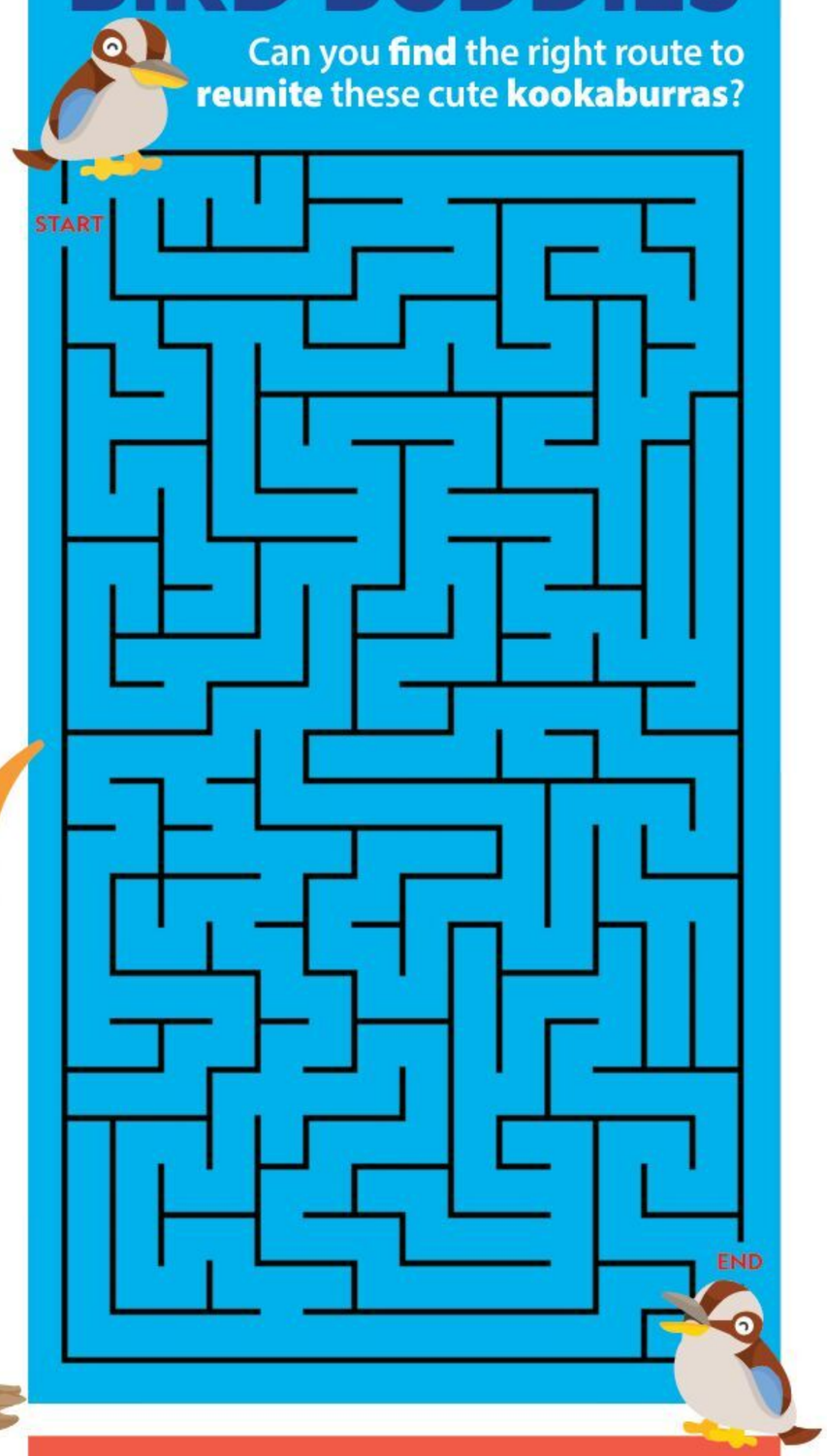
COOL CREATURES

Can you **fit** these awesome **animals** into the **grid**?

- BILBY
- DINGO
- DUGONG
- ECHIDNA
- PLATYPUS
- POSSUM
- QUOKKA
- QUOLL
- WALLABY
- WOMBAT

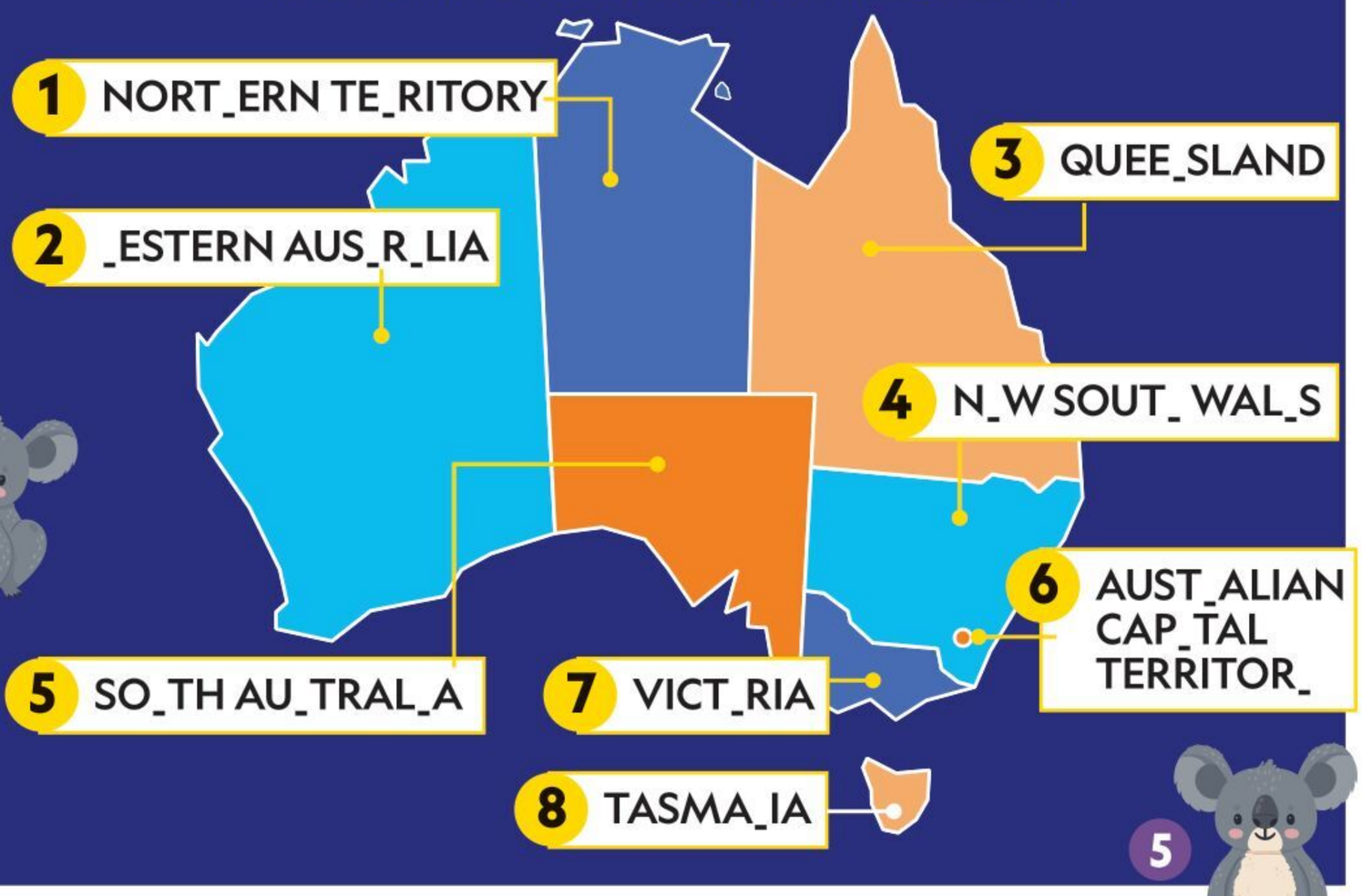
BIRD BUDDIES

Can you **find** the right route to **reunite** these cute **kookaburras**?



MAP MAKER

Replace the **missing letters** to complete the **names** of the six **Australian states** and two mainland **territories**.



ANIMAL STACK

Fill in the empty **squares** to finish and start each **four-letter word**. Do it correctly and you'll reveal one of **Australia's** amazing soaring **mammals, the sugar _____!**

PLU		RIN
PUL		ATE
MIN		SLE
BEN		OOR
MAZ		ASY
REA		OAR

All pictures © Adobe Stock

ERS

Tackle these tricky challenges to boost your brain cells!

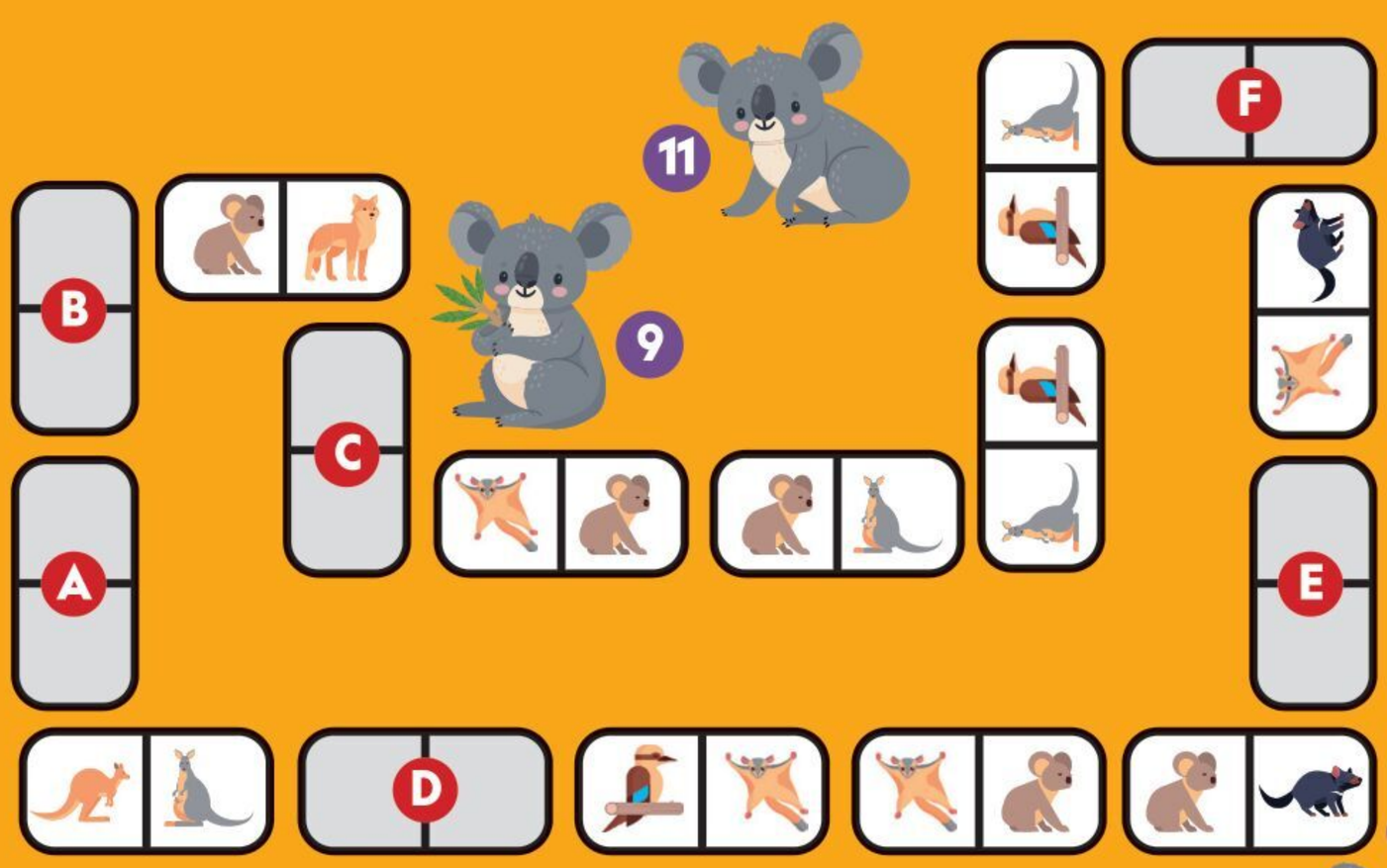
SEARCH & FIND

Which **two koalas** only appear **once** on these pages?

Answers on page 49

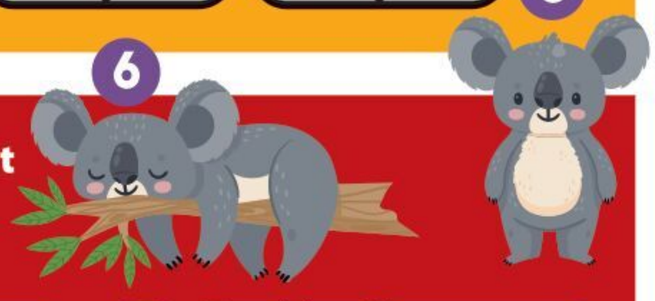
CREATURE CONNECTIONS

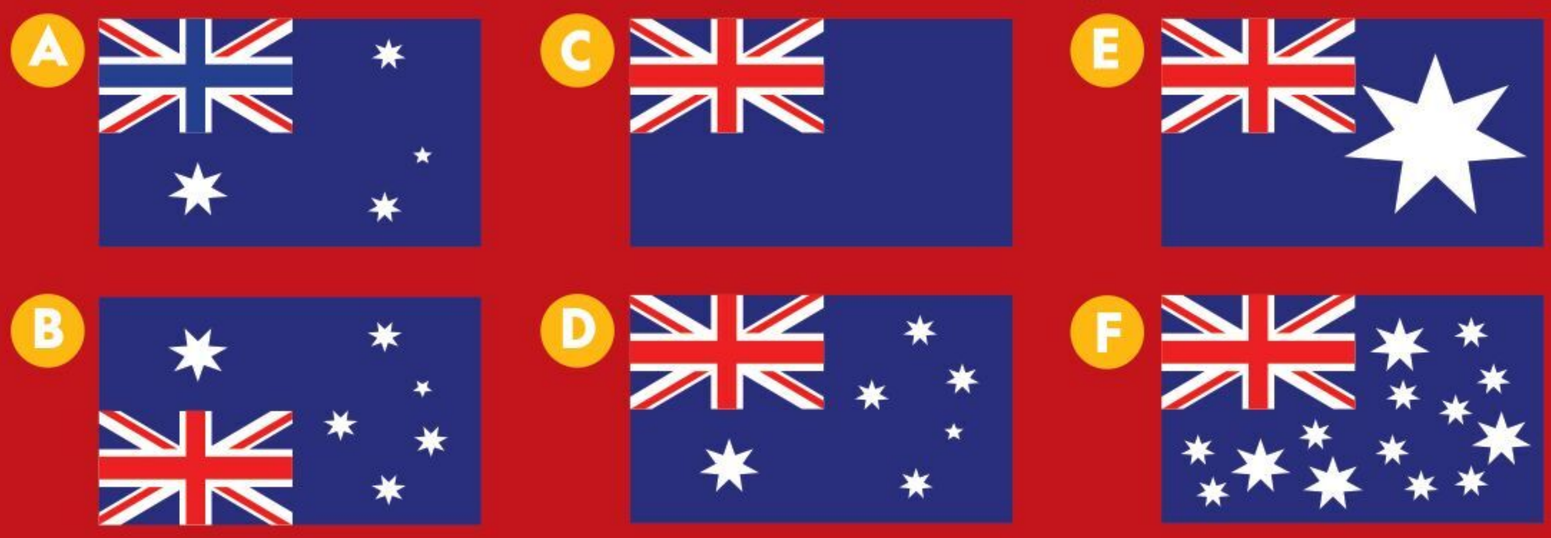
Can you place the **six animal panels** onto the **shaded spaces** to complete this loop? The panels must contain the **same image** on the **ends that are touching**.



FLAG FUN

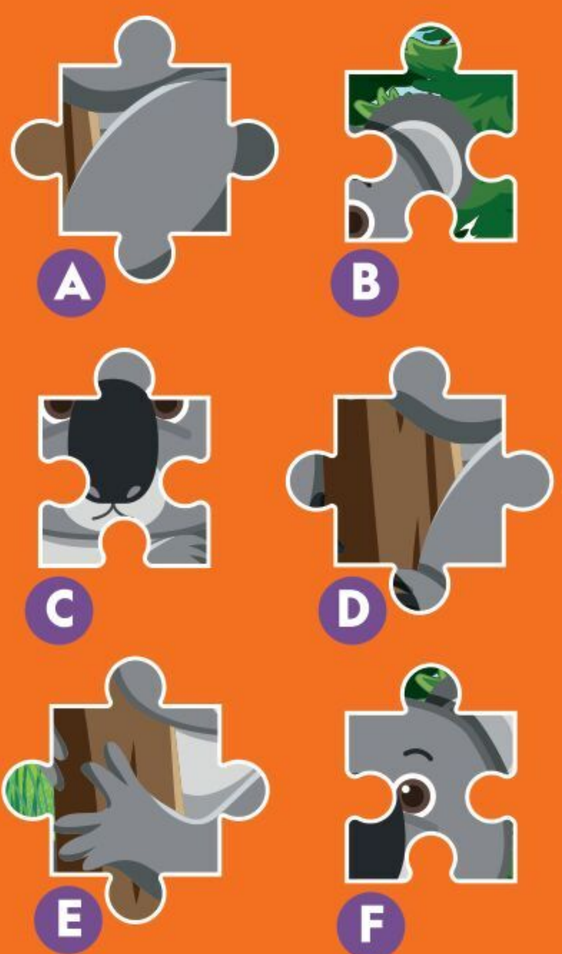
Can you **spot** the **correct** Australian **flag**?





MISSING PIECES

Find the **two missing jigsaw pieces** from this koala pic…



PICTURE PERFECT

Use the **first letter** of each object to **reveal** a **famous Australian animal**.

WHAT IN THE WORLD?

SCHOOL DAZE

These photographs show close-up views of things at school. Can you unscramble the letters to identify what's in each picture?
Bonus: Use the yellow letters to help you answer the joke below…

Answers on page 49

ULRRE

RAETW NIFONTUA

BRBURE

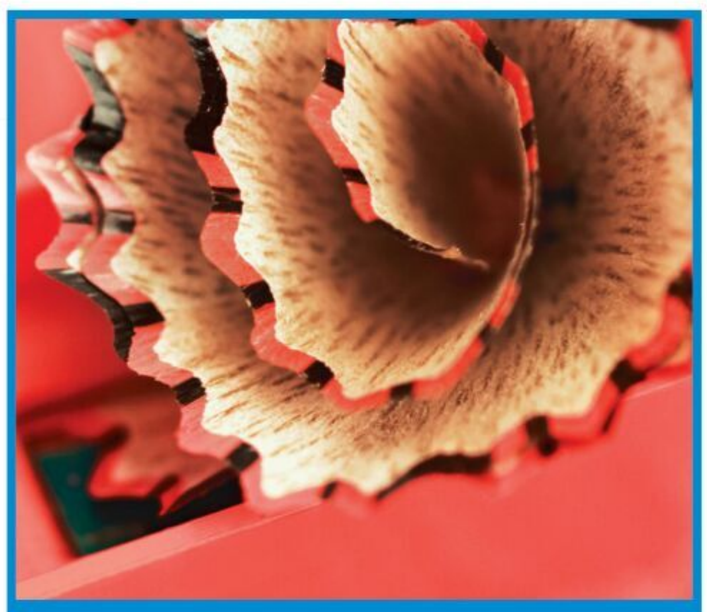
ENP

LGEU KTCIS

IDYICTOARN

ICLNEP CAES

CCPAAKKB



NLEPCI NPSHEERRA

What type of school do surfers go to?

ANSWER: __O_____G___H____!

Top row (left to right): Stockbyte / Photolibrary; Rob Casey / Getty Images; © Getty Images UK.
Middle row (all): © Getty Images UK.
Bottom row (left to right): © Getty Images UK; © Corbisrf / Corbis; © Photosindia.com Llc / Alamy.

FUNNY FILL-IN

GRAMMAR TERMS!
Noun – a person, place or thing
Verb – an action word that describes what a person or thing does
Adjective – a word that describes a noun
Adverb – a word that describes a verb

THE QUIRKY INVENTOR

Ask a friend to give you words to fill in the blanks in this story without showing it to them. Then read it out loud for a laugh.

I was going to be rich! I had just invented the first electric _____ (noun). Using a(n) _____ (tool) from _____ (relative's name)'s toolbox, I built it out of old _____ (noun, plural), metal _____ (noun, plural), and rubber _____ (noun, plural). The first time I turned it on, the machine worked _____ (adverb ending in -ly).

I couldn't believe it. "_____ (exclamation)!" I yelled, _____ (verb ending in -ing) up and down. I quickly invited a(n) _____ (adjective) billionaire to check out my invention. I couldn't wait to sell it for _____ (large number) million pounds and live like _____ (name of a celebrity). But when I turned it on, something went terribly _____ (adjective). The machine started _____ (verb ending in -ing) and _____ (noise ending in -ing). Suddenly it spewed _____ (something slimy) and shot slices of _____ (food) in all directions. The billionaire started screaming at the top of their _____ (body part, plural) and legged it out of my lab. Good thing I still get my weekly pocket money…

DAN SIPPLE

FUN STUFF

MAKE IT AUSSIE PARTY TREATS!

Make these **simple sweet snacks** for any **celebration!**

FAIRY BREAD

'Baking' doesn't get more basic than this!

What you'll need

- White bread
- Butter or margarine
- Hundreds and thousands

1. Butter some nice white bread, sprinkle on some hundreds and thousands, then cut into triangles. Simple and delicious!

Place your buttered bread in a **high-sided baking tray** before adding the sprinkles – it'll **stop them falling on the floor!**

HONEY JOYS

Crispy, chewy, gooey delights!

Makes 12–15

What you'll need

- 90g butter
- 1 tbsp sugar
- 3 tbsp honey
- Cupcake cases
- 120g cornflakes
- Pinch of salt (optional)

1. Put the honey, sugar and butter in a large saucepan. Then ask an adult to heat on a medium setting until the sugar has dissolved and the mixture goes frothy.

2. Take off the heat and stir in the cornflakes (and salt if you like) until coated with the glaze.

3. Spoon into the cupcake cases and bake in an oven at gas mark 4 / 180°C / 160°C fan for 10 minutes. Leave to cool before eating!

THE LAST LAUGH

Q. What's the most popular drink in Australia's capital?
A. *Cranberra* juice!

Q. Why didn't the marsupial get the job?
A. It wasn't *koala*-fied!

Q. What do you call a lazy joey?
A. A *pouch* potato!

Q. What did the wombat say to its best friend?
A. There's no *wombat*-er than you!

Q. What's a kangaroo's favourite music?
A. Hip hop!

Q. Why did the koala put the kettle on?
A. Because it wanted some *koala tea* time!

Q. What's a *sophisticated* kangaroo's favourite type of music?
A. *Hop*era!

Q. What do you call a poorly frog?
A. Un*hoppy*!

Photos © Getty Images UK

FUN STUFF ANSWERS

PAIR THE PICS! (page 24)

B and F are the same.

CROSSWORD (page 42)

1 G	A	2 S	■	3 A	■	4 B	■	■	5 F	■	■	6 S	E	7 E
R	■	8 M	A	R	S	U	P	I	A	L	9 S	■	■	A
10 E	M	U	■	E	■	S	■	■	R	■	Y	■	■	R
A	■	G	■	11 A	C	H	E	■	M	■	12 D	O	13 T	S
T	■	■	14 T	■	■	■	■	■	15 N	E	O	N	■	A
16 B	U	S	H	T	U	17 C	K	E	R	■	18 E	A	S	T
A	■	■	O	■	■	A	■	I	■	■	Y	■	M	■
19 R	E	U	N	I	O	N	■	G	■	■	O	■	A	■
R	■	■	G	■	■	B	■	20 H	O	P	P	I	N	G
21 I	R	I	S	22 H	■	E	■	B	■	■	E	■	I	■
E	■	■	■	O	■	23 R	O	O	■	24 B	R	I	A	N
R	■	■	■	R	■	R	■	U	■	■	A	■	■	■
R	■	25 F	26 U	N	■	A	■	R	■	27 S	H	E	28 D	■
E	■	■	L	■	■	■	■	S	■	■	O	■	I	■
E	■	■	A	■	■	29 T	■	■	■	30 D	U	N	N	Y
31 F	32 A	I	R	Y	B	R	E	33 A	D	■	S	■	G	■
■	S	■	U	■	■	O	■	K	■	■	34 E	W	O	K
35 S	H	Y	■	36 O	U	T	B	A	C	K	■	■	■	■

SPOT THE DIFFERENCE (page 43)

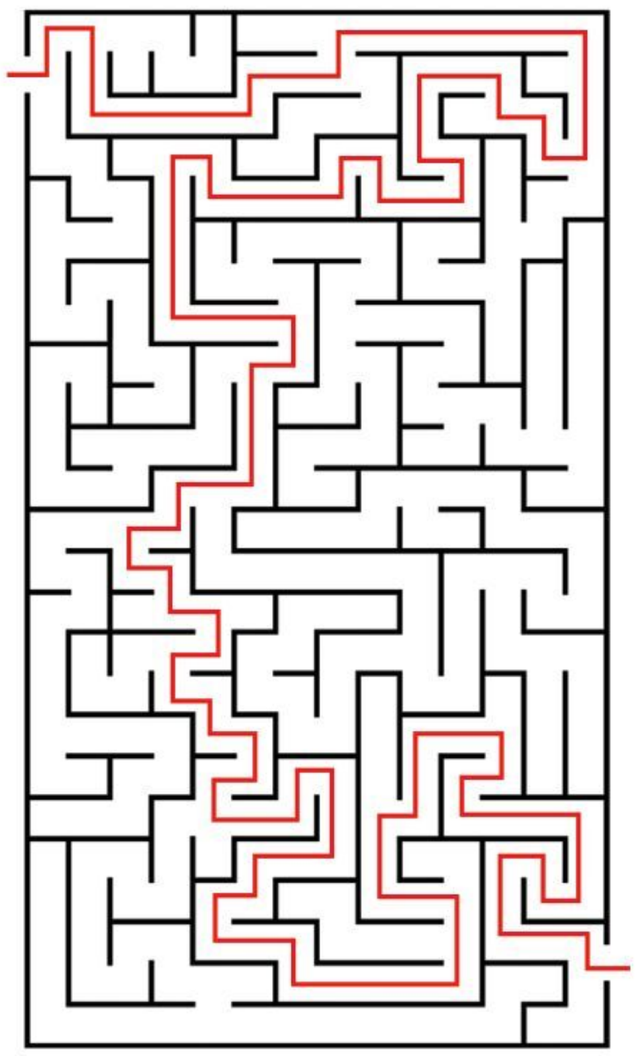
BRAIN BOOSTERS (page 44-45)

SEARCH & FIND:
4 and 10 are only shown once.

COOL CREATURES:

				E		W								
				C		A								
				H		L								
				I		L								
				D		A					W		Q	
				N		B		D			O		U	
P	L	A	T	Y	P	U	S				M		O	
O						G					B	I	L	B	Y
S				Q	U	O	K	K	A		L			
S						N			T					
U			D	I	N	G	O							
M														

BIRD BUDDIES:



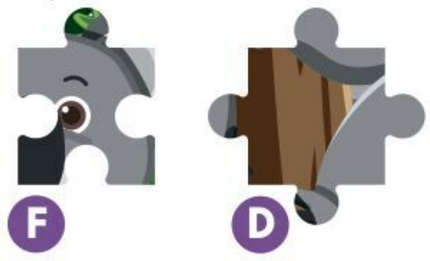
MAP MAKER:
1-NORTHERN TERRITORY;
2-WESTERN AUSTRALIA;
3-QUEENSLAND;
4-NEW SOUTH WALES; 5-SOUTH AUSTRALIA;
6-AUSTRALIAN CAPITAL TERRITORY;
7-VICTORIA;
8-TASMANIA.

ANIMAL STACK:
GLIDER

CREATURE CONNECTIONS:
1-E; 2-D; 3-F; 4-C; 5-B; 6-A.

FLAG FUN:
D is the correct flag

MISSING PIECES:
1-F; 2-D.



WHAT IN THE WORLD (page 46)

Top row: RULER, WATER FOUNTAIN, RUBBER.
Middle row: PEN, GLUE STICK, DICTIONARY.
Bottom row: PENCIL CASE, BACKPACK, PENCIL SHARPENER.
Bonus: BOARDING SCHOOL

WACKY WORLD!

Check out the planet's strangest pictures...

Enormous ears!

Meet **Simba**, a **baby goat** from **Pakistan** whose **ears** measure a whopping **54cm** – *each*! Simba's ears are so long that he trips over them, but thankfully his owner **Mohammed Hasan Narejo** has made him a **special harness** to carry them in. Amazingly, the **two-month-old** kid's ears are **still growing**!

Palm people

Pedestrians strolling along this weird walkway in **Vietnam** are guaranteed to *grasp* at the view! The **Golden Bridge**, on **Ba Na Hill** in **Danang**, appears to be held up by **two giant stone hands**!

Mammoth sculpture trail

Fifty-five decorated **dinos** have been greeting visitors to **Norwich** city centre all summer. The **2m** ***Tyrannosaurs*** are part of a **sculpture trail**, raising money for **UK children's charity**, **Break**. *Roar*-some!

Mammoth sculpture trail © GoGoDiscover / Break; All others © Getty Images UK.

WINDY WORMS

Contestants had lots of fun at the **Worm Charming Championships** in **Falmouth**, **UK**, last month. The aim was to **vibrate the soil** and **lure worms to the surface**. Sadly, this chap's **tuba** failed to work its *charm*!

FELON FEAST

Diners at this **prison-themed restaurant** in **Tokyo**, **Japan**, eat meals inside **jail cells**. That's one way to make sure people pay the bill!

SAND-TASTIC

This giant sculpture was carved on **Taiwan**'s **Fulong Beach** during the **International Sand Sculpture Arts Festival** – it shows characters from **Taiwanese TV show *Pili***.

NATIONAL GEOGRAPHIC KiDS

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Editor Georgia Harrison
Digital Editor Gemma Chandler
Deputy Digital Editor Annabel Lever
Senior Designer Claire Brisley
Staff Writer Alexander Tan
Promotions & Partnerships Director Tracey Steel
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Editorial enquiries editorial@ngkids.com.au
Promotions & Partnerships enquiries tracey@ngkids.com.au
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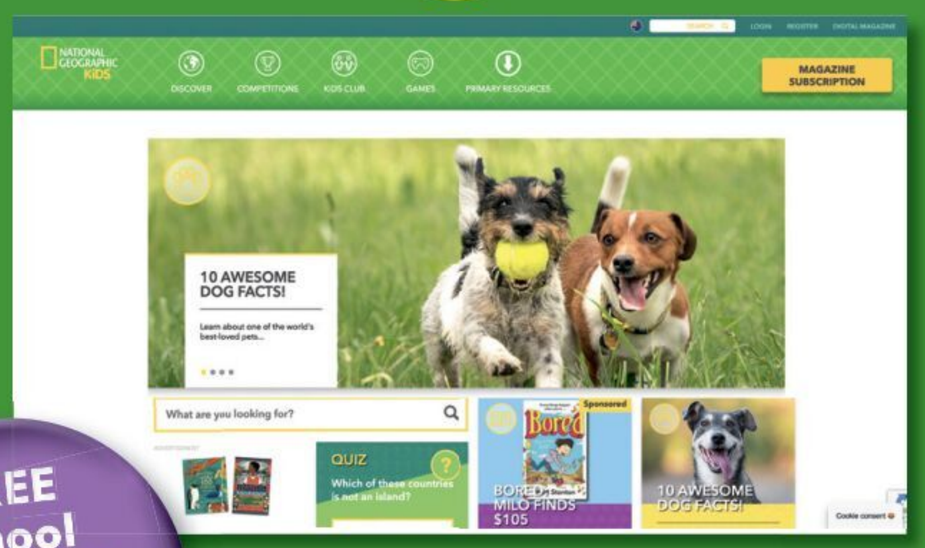

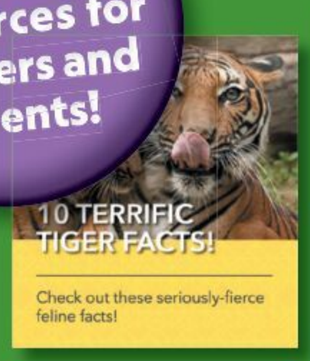

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BUMPER FUN STUFF!

How to help frogs!

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4 POSTERS!

10 cool kangaroo facts!